

American Aviation

MANAGEMENT
ENGINEERING
OPERATIONS
MAINTENANCE
EQUIPMENT



MAY 26

1952

Stuart G. Tipton,
General Counsel, Air
Transport Association
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EXCE COPY

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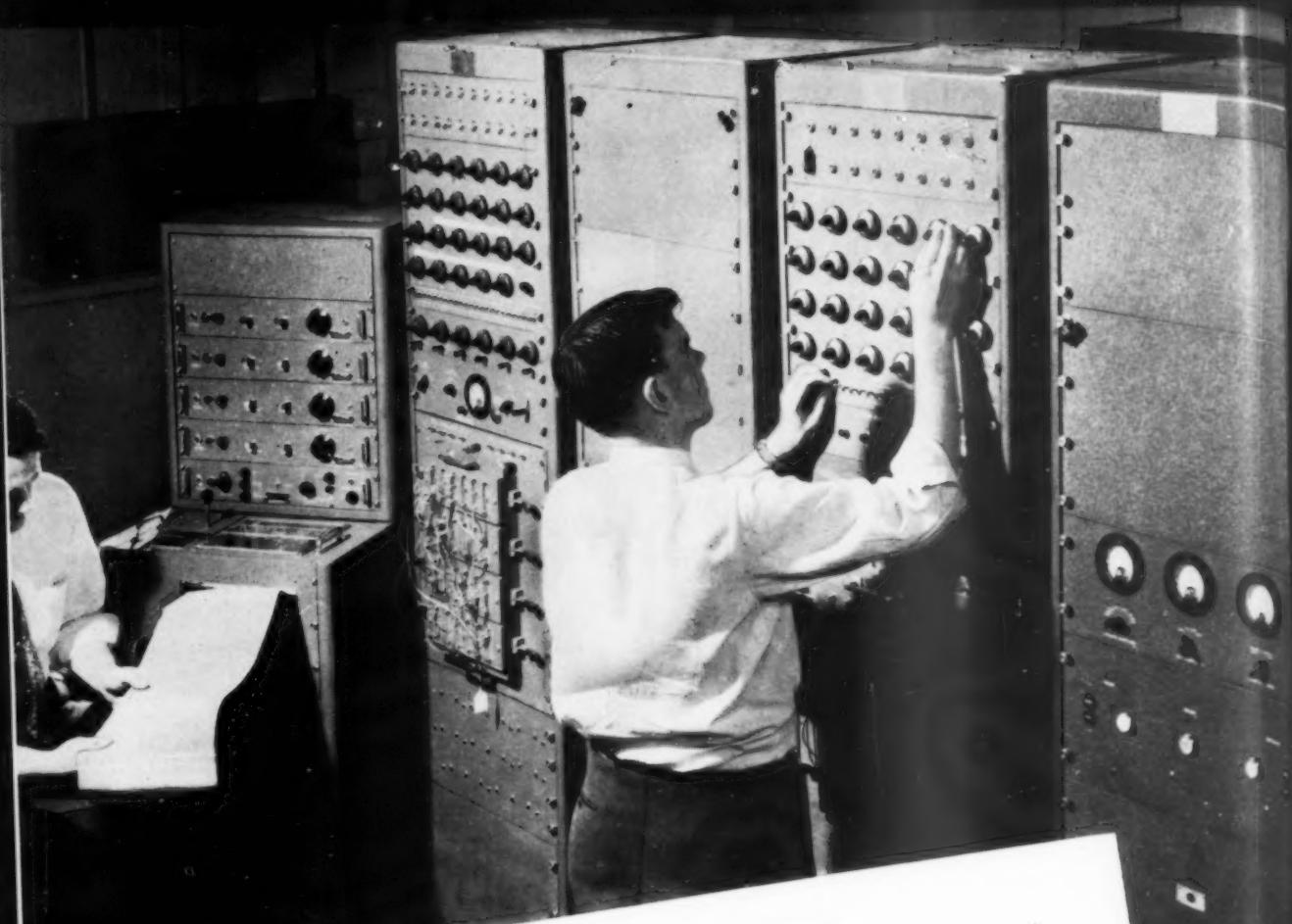
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35 cents



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That, in effect, is what these engineers are doing—by means of mathematical equations fed into Honeywell's analog computing equipment, part of which is shown above. Simulated flight testing of automatic controls in this manner is constantly being done by Honeywell aero research men because it makes actual flight testing easier and less costly.

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AERONAUTICAL DIVISION
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Trends

Gen. Hoyt S. Vandenberg's undisclosed illness is said to be more serious than official statements indicate, and there's a strong possibility that the Air Force chief of staff won't return to active duty after discharge from the hospital following his operation. Washington observers list his most probable successor as either Gen. Curtis E. LeMay, recently named vice chief of staff, or Gen. Nathan F. Twining, acting chief of staff in Vandenberg's absence.

•

International Association of Machinists is expected to demand a union shop, increased pay, and expansion of fringe benefits in forthcoming negotiations with aircraft manufacturers. AFL's Council of Aircraft Unions, which claims to represent 250,000 union members, has named a special committee to formulate demands which it suggests be made.

•

Aircraft industry, because of the stretch-out, is now shooting for employment goal of 750,000 by year's end, instead of 1,000,000 as expected earlier.

•

Air Force's revised production schedules are being met. Output in March was only 1% behind schedule.

•

Airlines and military will have their use of aviation gasoline curtailed for some time, even if oil strike is settled quickly. Walkout cut deeply into avgas stocks. It also dimmed hopes for early lifting of government order requiring four milliliters of tetraethyl lead in every gallon of domestically-used avgas.

•

CAA may ask funds in next budget for a number of Dehmel trainers for use by air-line pilots, particularly those of smaller lines that can't afford the costly devices. The Doolittle Commission has recommended more of such training (see "News at Deadline").

•

One midwest state is going to carry out its airport program with state and local funds only, passing up Federal-aid airport grants. Reason: it's dissatisfied with CAA's administration of the airport program and with trickle of Federal funds available under reduced appropriations. One other state may take same course.

•

Removal of price ceilings on services of fixed base operators is being sought by National Aviation Trades Association in representations to OPS. NATA is particularly unhappy about having flight training prices frozen at depressed levels set by Veterans Administration for the GI program.

The Washington View

The Military and the Prototypes

Are the military services being shortsighted in opposing the aircraft industry's plans for development of two new types of planes vitally needed by the nation's airlines? Isn't it true that the Air Force and Navy need jet transports and short-haul aircraft capable of operating from relatively small airports?

In testimony before the Senate Interstate and Foreign Commerce Committee, Sen. Pat McCarran (D., Nev.) pointed out that while the armed forces have been opposing development of a jet transport and other new commercial planes, they would quickly take such aircraft over in case of emergency.

And T. H. Davis, president of Piedmont Airlines, in a presentation before the same Senate group, reported the military services "are now spending large sums of money to modify their DC-3 type aircraft to Super DC-3's at a unit cost of not much less than the cost of a brand new modern DC-3 replacement. In addition, they are buying back large numbers of DC-3's from civilian operators who less than five years ago bought them out of military surplus."

Exactly what features of four prototype construction bills now under consideration will be reported out is not yet known, but it seems apparent that little beyond a recommendation that funds be authorized for CAA's jet prototype testing program will be forthcoming from the Johnson committee.

There are several good reasons. In the first place, the air transport industry seemed agreed that S.1402, which would provide \$8 million for development of a local service prototype, was unnecessary at this time. As for S.2344, which would provide construction differential subsidies for U.S. flag international carriers, most of those testifying felt the U.S. aircraft industry could continue to compete favorably with foreign companies in price as it had in the past.

S.481, setting up a \$100 million Aircraft Development Corp. to buy current and advanced aircraft designs and lease them to carriers, seems far too expensive a project. S.477, which calls for the development of new transport types by having the Air Force administer development funds, is laudatory but tends to inject Government (with all its controls and supervision) into the evolution of new plane types. Most aircraft builders prefer as little Government activity in this field as possible.

Thus, when Sen. Johnson gets through analyzing the bills and the testimony, he may recommend the possible purchase of a de Havill-

land jet Comet for CAA prototype tests and possibly a modified S.477 pinpointed toward development of a jet transport.

WSB Power Waning?

There's a very good possibility the Wage Stabilization Board will be stripped of its power to make recommendations on wages and fringe benefits as it did in the Wright Aeronautical and Douglas-Long Beach disputes with the UAW-CIO.

Now that the Senate Banking Committee has voted 7-3 to curtail the WSB's powers and replace its 18 members from industry, labor, and the public with public members subject to Senate confirmation, the entire Senate may go along with this recommendation. Many members of the House are also ready to crack down on the Board's powers.

Name Change Reflects Policy

Less than two weeks after it was created as a joint agency of the Defense Department and the Office of Defense Mobilization, the Production Policy Advisory Commission (see page 66) was taken over by ODM and renamed the Advisory Committee on Production Equipment. This action by Acting Defense Mobilizer John R. Steelman, who had President Truman's approval, is considered a slap at the Pentagon, which has preferred to use its money for finished war materiel than for production machinery.

The nation's civilian mobilizers, notably Clay P. Bedford, Charles E. Wilson, Manly Fleischmann and others, had insisted that since machine tools are essential in any emergency and since they tend to grow obsolete more slowly than finished planes and tanks, they are a better long-term investment.

Most of these individuals are now back in civilian life, but they will continue to make their points in the ODM's Advisory Committee. Bedford, for example, was one of the first to be named in the Defense-ODM group. Others selected include Fleischmann and Lt. Gen. K. B. Wolfe (Ret.), former Deputy Chief of Staff-Materiel, another exponent of a long-range machine tool policy.

Under its new set-up, the ODM committee will be responsible not only for making certain that adequate tools are available for current defense needs but also for adequate tool production capacity and the maintenance of standby tools. These functions overlap and will probably supersede many of the functions of the Defense Department's Munitions Board.

Robert M. Loebelson

Another Jet Fighter Equipped 100% with Goodyear Wheels and Brakes



McDonnell XF3H-1, the "Demon," shown during its initial flight. Inset shows experimental model on hard-stand following successful tests.



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LIKE many of America's finest jet aircraft, the new McDonnell carrier-based fighter, XF3H-1 lands safely at high speeds, thanks to wheels and brakes by Goodyear, installed on all landing gear.

Even before successful completion of test flights, contracts were issued for production of the new Demon for the Navy, and production of this latest high-speed jet is already under way.

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American Aviation

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1025 Vermont Avenue N.W., Washington 5, D.C.



May 26, 1952 Vol. 15 No. 46 ABP

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Perreault Named Managing Editor

WILLIAM D. PERREAULT, technical editor of AMERICAN AVIATION for the past four years, has been promoted to managing editor.

Perreault's industry experience before joining AAP included three years with Colonial Airlines as supervisor of maintenance training and procedures and later as chief inspector; five years with American Airlines as flight engineer instructor, pilot equipment instructor, supervisor of training aids, and supervisor of military maintenance manuals.

Prior to joining American he had served with Pratt & Whitney as production test engineer and with the Allen School of Aeronautics, Providence, R. I., as a mechanic instructor.

His duties as technical editor will be taken over on June 1 by Joseph Murphy, now supervisor of CAA-ATA liaison for American Airlines at Tulsa, Okla. Murphy, who has been with American's maintenance and engineering departments since 1943, has for the past few years been working with CAA on matters of airline inspection and maintenance, establishment of inspection and overhaul periods for aircraft equipment, and related activities.

Previously he wrote and edited American's maintenance and fleet service manuals.

other publications

American Aviation Daily (including International Aviation): Published daily except Saturdays, Sundays and holidays. Subscriptions: \$18 one month; \$200 one year. Daniel S. Wentz II, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy, \$7.50. Marion E. Grambow, managing editor.

Official Airline Guide: Monthly publication of airline schedules and fares. Subscriptions: U. S. A. and countries belonging to the Pan American Postal Union, including Spain and the Philippines, \$11.00 one year, Canada, \$11.50. All other countries, \$12.50. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. Central 6-5804. C. N. Johnson, managing editor.

American Aviation Traffic News (incorporating Air Tariff Reports): Published daily except Saturdays, Sundays and holidays. Subscriptions: \$150 a year. Preble Staver, managing editor.

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simplify handling and to facilitate passenger-cargo operations. AEROTHERM seats are designed so that small detail parts, rather than whole major assemblies, can be replaced at scheduled stops quickly, easily, and inexpensively. The Slumberyde is contoured to fit the Douglas DC-4 and DC-6, Boeing Stratocruiser, and Lockheed Constellation.

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Letters

Letters should be addressed to The Editor, American Aviation Magazine, 1025 Vermont Ave., N.W., Washington 5, D.C. Anonymous letters will not be printed, but names will be withheld upon request.

Most Complete

To The Editor:

I noted with great interest the statements contained in the editorial entitled "Appraisal 1951-52" in the April 28 issue of AMERICAN AVIATION. It was an exceedingly well done job.

Congratulations on this whole issue. It is the most complete I have ever had the pleasure of reading.

FRED M. GLASS
Director, Department of Airport Development
The Port of New York Authority

Tickled

To The Editor:

I decided it was about time to write and say how much I enjoy "En Route."

Lolita is especially responsible for I'm tickled pink that she is being revived. I really fell in love with the picture, and for once, I agree with the Yugoslavs, she is a beautiful work of art. Having made a study of ceramics, I can understand how you could have been completely fooled and not realized she was not "baked."

Again, your article brings me much pleasure and I shall look forward to the future issues of AMERICAN AVIATION.

POLLY SEDLAK
Alexandria, Va.

Textbook

To The Editor:

Again I feel compelled to write to you—this time about the April 28th issue of AMERICAN AVIATION.

I wonder if you know that you have published a wonderful textbook for the aviation industry and the colleges offering aviation programs? As you know, those of us in aviation education find it very difficult to secure current textbook material in our fields and being an author of one aviation textbook, I know all the reasons—the problem is so difficult.

Here in the April 28th issue, you have provided all the current material we need for assisting in the teaching of many aviation subjects, and I for one want you to know that we sincerely appreciate your efforts.

GENE KROPP

Assistant to the Dean
Parks College of Aeronautical Technology
East Saint Louis, Illinois

Useful

To The Editor:

Your special issue on air transport progress has been received with con-

siderable interest in this organization and our economics people are making very good use of your "Air Transport Facts and Figures."

I do, however, have one complaint. The statistics on world-wide traffic growth listed on page 67 are credited to IATA whereas in actual fact they are ICAO's.

S. G. COOPER

International Civil Aviation
Organization
Montreal, Canada

(AMERICAN AVIATION apologizes to ICAO for this error. Other items which have been brought to our attention:

- The World's Air Transport Fleet, footnoted as an AMERICAN AVIATION survey, was part of a Civil Aeronautics Board study. The accompanying story noted this fact but the AA credit line was used.

- On page 82, "Selected International Traffic Figures," statistics in two columns ("Revenue Passengers Carried" and "Ton-Miles Available, Passenger, Cargo and Mail") of Air France listing were transposed.

"Rev. Passengers Carried" should read:

1950—764,646

1951—970,979

"Ton-Miles Available, Pass., Cargo and Mail" should read:

1950—180,600,234

1951—167,668,346

—Ed.

No Mugwump

To The Editor:

After reading your editorials and reports of your jaunts for the past six years, I had concluded that you were an editor of the "mugwump" variety. That is, until I read your "En Route" section of your April 14 issue on gambling in Las Vegas, Nevada.

You will no doubt receive many complaints from your readers who gamble or who see nothing wrong with gambling. As a member of the Church of Christ and a firm believer in living the New Testament way, I would like to congratulate you on your firm public stand regarding gambling.

There are some other evils that are definitely classed as sins in the New Testament that you and others could take a public stand upon also. Among these is the sin (called a sickness by the distillers, advertisers, psychiatrists, etc.) of drunkenness. If you can call gambling unproductive and sinful, how much more unproductive and sinful is drinking and its associated evils?

When the Prohibition Act was repealed in 1933 we were told that the Federal taxes from the liquor industry would amount to 2½ billion dollars and that this amount would help stabilize the nation's economy. What actually has happened? The U. S. government receives an estimated 5 to 7 billion dollars a year in taxes from the liquor industry and at the same time the cost to the federal and local governments for hospitals, lost income taxes due to lost wages, property damage, etc. for the evil of alcoholism amounts to 8 to 10 billion dollars annually! Right now the liquor industry is screaming "any more tax increases on our industry, is unfair tax, since other industries are not taxed equally with ours."

More power to you in your crusade on wrong-doing whether the wrongs are committed by people in the aviation industry or not.

JOHN B. KELLY, JR.
New York 25, N.Y.

Active

To the Editor:

It was very disappointing to read your article entitled "ATA Designs Low-Cost Omnidrome" in the May 12 issue of AMERICAN AVIATION and not find any reference to the work done by Maryland Electronic Manufacturing Corporation.

We have been very active in the VOR program for a number of years; we designed and made every Modulation Eliminator used by the C.A.A. and the military agencies; we made many of the Carrier Modulators and Carrier Modulator Drivers used by the C.A.A.; we now are in production on twenty-eight packaged VOR equipments for the C.A.A. and several for a foreign government; we now are in production on the first TVOR transmitters ordered by the C.A.A.; we cooperated with the ATA in the Friendship Airport TVOR project; we had an engineer present at each session of the ATA's three-day TVOR demonstration and apparently we were the only manufacturer that was sufficiently interested to have literature available on the subject; and we not only are "working out plans" for a packaged TVOR unit, but we actually have one in the process of being assembled.

It is difficult to understand how you could have overlooked us in view of our activity in the VOR and the TVOR field.

W. R. MORSE
President, Maryland Electronic Manufacturing Corporation, College Park, Maryland

Wings of Yesterday

25 Years Ago

The Bellanca monoplane, equipped with a Wright Whirlwind engine and piloted by Clarence Chamberlin and Bert Acosta, set a new world endurance record, remaining in flight for 51 hours, 11 minutes, 25 seconds, breaking the previous world record held by France by a wide margin of 5 hours 50 minutes 26 seconds.

Postmaster General Harry S. New awarded the contract for the operation of the New York-Chicago Air Mail Service to National Air Transport, Inc., of which Howard E. Coffin was president, and Col. Paul Henderson was general manager. The contract was to become effective July 1, 1927, and was awarded on the N.A.T. bid of \$1.24 per pound of mail carried.



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Editorial

Weight Versus Load

At the heart of the weakness in our military aircraft program is the simple fact that we have been trying to design and build aircraft by committees.

Every top designing and production engineer in the aircraft industry is fully aware of this weakness. The solution rests with the Air Force, primarily, although the Navy has been somewhat guilty as well.

Our military aircraft have been loaded down with excessive amounts of accessory equipment with the inevitable losses in performance, increased costs and time required to build the airplanes, and much higher cost and time needed for maintenance.

*by
W. W. P.*

The Air Force has had an abundance of committees responsible for each type of accessory and each major part of an airplane. Each committee seeks the ideal, whether it be for electronics, fire power, communication equipment, or whatnot. Conflicts between the Research and Development Command and Materiel have been numerous and virtually irreconcilable.

Military aircraft can't be designed and built by committees any more than a large industrial concern can be managed efficiently by numerous autonomous groups. Some one individual, or at most a small select group, must call a halt to committee demands somewhere.

Aeronautical engineers in industry have been warning about the trend. The ratio of gross weight to military load has increased at an alarming rate since World War II. Formerly this ratio was $7\frac{1}{2}$ to 1. Now it is averaging 10 to 1 and has actually reached 13 to 1.

Extrapolating the curve to 1960, a fighter plane capable of carrying a military load of 6,000 pounds would have to have a gross weight of 120,000 pounds! These figures come from a Navy man—Ivan H. Driggs, director of research division of the Navy Bureau of Aeronautics.

A Lockheed aerodynamicist, P. A. Coleman, said recently that the weight of one series of military aircraft has gone up 35% during its development from the first model to the current one. The increase in the weight of equipment in the airplane is 79%.

Some one on top level in the Air Force must start calling the shots or we will end up with airplanes with the very finest of everything—but no load and no performance. The MIG-15 outperformed in Korea in the same way that the Jap Zero outperformed in World War II simply because these airplanes weren't weighted down with ultra-perfect auxiliary equipment.

The manufacturers are helpless before the driving sales onslaught by committees from the various services. It's time somebody on a high level began getting tough and toning down the committee influence and restricting design to performance and load.

Security or Silliness?

Aircraft manufacturers have been encouraged to bring to this country valuable technical help from abroad, especially from England. But when these technical men have arrived, many have been refused security clearance by Air Force Intelligence.

One aircraft company which obtained a license to build a British jet engine hired a group of British technicians who had played important roles in developing the engine. Air Force Intelligence refused security clearance!

One British expert had done extraordinarily fine work on a particular project. His report was highly valued and was obtained by a U. S. company. The company then hired the British expert, but when he arrived for work he wasn't even permitted access to his own report! The report was so valuable it had been classified.

Security is vitally important but it sometimes can be carried to silly lengths. We know of one instance where Air Force Intelligence has to date ignored a tip which really merited looking into. Somebody ought to start running the Air Force with common sense and a bold hand.

Air Force Maintenance

There is much talk going the rounds of aviation circles about worsening Air Force maintenance. Competent mechanics and technicians are increasingly difficult to find, while airplanes are getting more complex steadily. It is a situation which needs top level attention.

It is unfortunate that the Air Force takes such pains to hide its accident records, but if the newspaper reports alone are to be judged, the accident rate has been fearfully high in the past year or so. Airplanes are costly and require a lot of time to build. There is no excuse, in the final analysis, for such a large number of accidents. Without access to the records it is obviously impossible to determine how many are due to poor maintenance and how many to poor flight training and how many to just plain accidents, which will always be with us.

But the Air Force leadership had better take cognizance of the widespread talk about inadequate maintenance, and of the high accident rate, and launch a full-scale remedial program.

One Less Trunk

The first numerical change in the number of original trunk air carriers has just taken place with the formal merging of Inland Airlines into Western Air Lines. Inland was one of the 16 original trunks issued a grandfather certificate with the passage of the Civil Aeronautics Act of 1938. For some years it has been a subsidiary and a division of Western but now it passes out of existence as a separate certificate, reducing the grandfather trunks to 15. Numerous merger proposals pending before the CAB may further reduce this number before the year is out.

... WAYNE W. PARRISH

AMERICAN AVIATION



Samaritan of the Skies — From the battle lines in Korea to the 60-foot platform on the Navy hospital ship *Consolation*, anchored off shore is a routine flight for this Sikorsky H-5 helicopter. During a six weeks' test last winter, this craft was a part of a flying ambulance shuttle of Air Force, Navy and Marine helicopters that evacuated some 400 wounded from Korea.

These earlier helicopters clearly showed how hours and even whole days could be saved in transporting casualties. Again and again, where shore medical facilities were

limited and the weather would have been too rough for the small boats ordinarily used, helicopters transported their human cargoes in comfort and smoothness to these efficient havens afloat. The result of this test—the Navy has adopted this mode of transfer as Standard Operating Procedure.

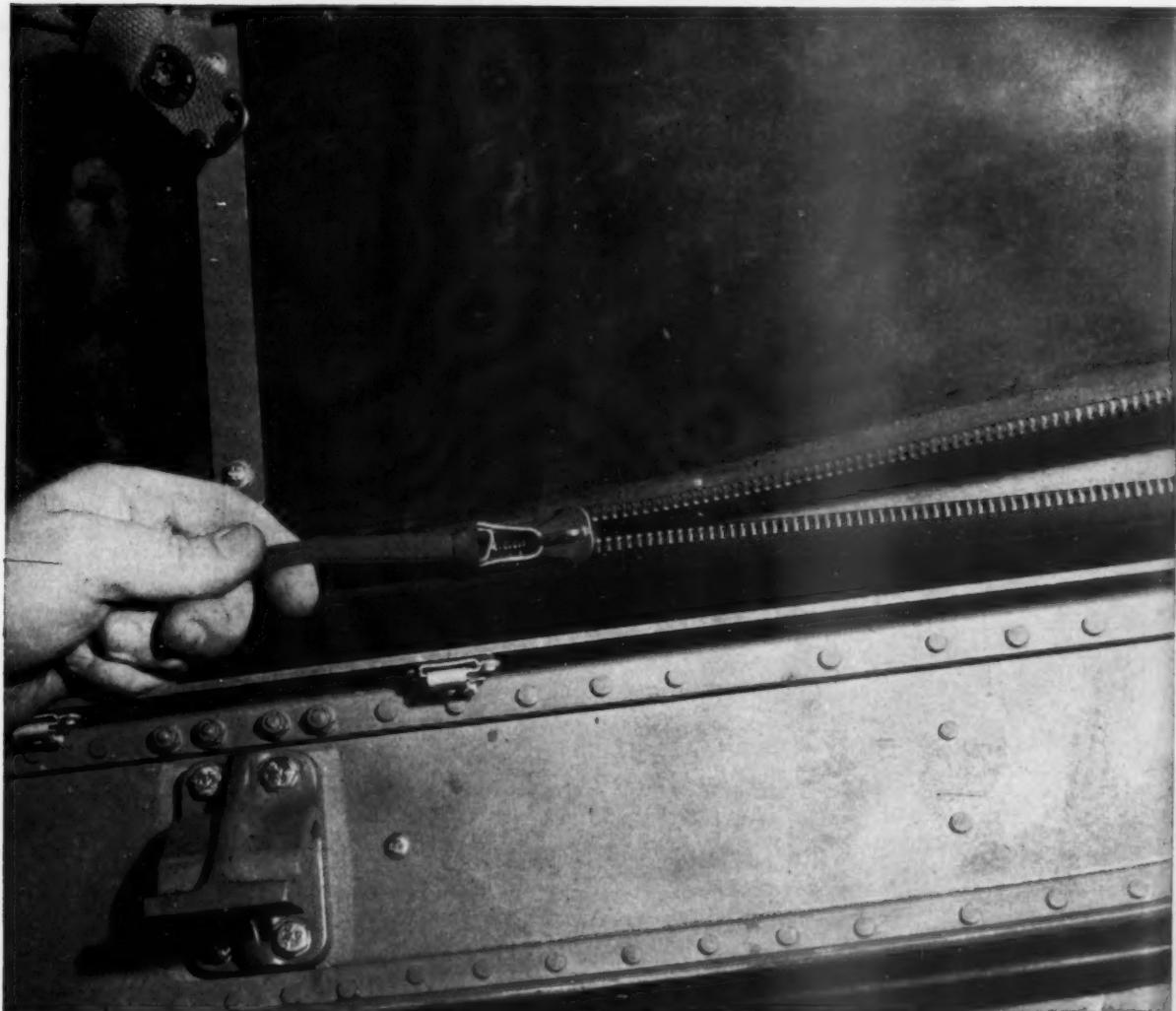
Thus again, Sikorsky helicopters have helped forge another link in the life-saving chain they pioneered in Korea . . . a chain which has already accounted for the rescue of thousands.

SIKORSKY  **AIRCRAFT**

BRIDGEPORT, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

B.F. Goodrich



It lets men in - keeps fumes out

GASOLINE FUMES from the bomb bay fuel tanks in Lockheed's Neptune had to be kept completely away from equipment in the forward compartment. Yet the bomb bay couldn't be walled off because a ready entrance between the two compartments was needed. That called for an airtight curtain that would open in a jiffy.

Lockheed wondered if rubber might do the trick. They called in B. F. Goodrich. BFG engineers built a mammoth curtain to cover the entire width of the lower fuselage—made of fire-resistant fabric, coated with fume-resistant rubber. They made the curtain

airtight—yet completely removable—by running a pressure sealing zipper all the way around the edge.

This B. F. Goodrich-developed zipper has overlapping molded rubber lips. They provide a 100% seal against fumes. And they make it possible to open the fume curtain in no time at all.

B. F. Goodrich fume curtains are now standard equipment on the Neptune.

Besides fume curtain applications, BFG pressure sealing zippers are used for airplane doors, air ducts, inverter covers, control surface seals. They are extremely flexible. They fit snugly around complex shapes—such as

squares, kidneys and the like where clamps won't seal. They are available in light-duty and heavy-duty sizes. They cement right onto either fabric or metal. They save space and weight.

Other B. F. Goodrich products for aviation include tires, wheels and brakes; heated rubber; De-Icers; Avtrim; Plastilock adhesives; inflatable seals; fuel cells; Rivnuts; accessories. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F. Goodrich
FIRST IN RUBBER

Engineering to the *Nth* power...



The Hand Behind Tomorrow's Blueprint!

Convair was the first to engineer, build and *fly* the delta wing—the most promising of new aerodynamic designs. Years before the Air Force's XF-92A delta wing flew, Convair research predicted that the triangular configuration would outperform any conventional jet plane... and do it in trans-sonic and super-sonic speed ranges... at altitudes beyond sight!

Today Convair is continually at work improving this revolutionary design and even adapting it to water-based planes. Whether pioneering or perfecting, the versatile skills of Convair engineering are present in every stage of the delta wing development... *truly the hand behind tomorrow's blueprint!*

It's all part of engineering that aims at the maximum, the *Nth degree of air power... the *Nth Power!**

Convair-Liner—unequalled for safety, preferred by passengers and pilots... more Convair-liners used by more airlines than any postwar plane!



IN THE AIR IT'S

CONVAIR

CONSOLIDATED VULTEE AIRCRAFT CORPORATION

CONVAIR IS ADDING ANOTHER 116 MILLION SQUARE FEET OF FLOOR AREA TO ITS PLANT FACILITIES, MAKING A TOTAL OF MORE

For Rapid, Accurate Control at
Low Weight/Horsepower Ratio
and extremely Low Inertia



*The Navy's
Lockheed P2V's*

USE

**VICKERS
HYDRAULIC
TRANSMISSION**

The Emerson Electric Mfg. Co. tail turret for the Navy's long range patrol bomber, Lockheed P2V's, is powered by a Vickers hydraulic transmission. This equipment comprises the power transmission and associated controls of the servo circuit. Accuracy and rapidity of response are fundamental characteristics of this Vickers equipment because of the extremely low inertia of rotating parts. The two separate hydraulic motors for train and elevation of the turret are individually and completely controllable in direction of rotation and speed by the application of a few milliamps of signal current.

Vickers hydraulic equipment is now used in a wide variety of servo circuits. Our engineers will gladly discuss their possibilities and advantages with you.

3757



Vickers Double Pump and Control assembly provides complete and independent control of speed and rotation of two hydraulic motors.



Vickers Hydraulic Motors can be stopped accurately to position without clutches or brakes . . . can be started and stopped instantly because of very low inertia of moving parts.

VICKERS Incorporated
DIVISION OF THE SPERRY CORPORATION
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ENGINEERS AND BUILDERS OF OIL HYDRAULIC
EQUIPMENT SINCE 1921

When & Where

June 1-3—Airport Lighting Conference, sponsored by American Association of Airport Executives, Deshler-Wallick Hotel, Columbus, Ohio.

June 1-6—Society of Automotive Engineers, Summer Meeting, Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.

June 4-6—Air Transport Association, Financial & Accounting Committee, Brown Palace Hotel, Denver, Colo.

June 4-6—California Association of Airport Executives, Stockton, Calif.

June 7-8—7th Annual Shawnee, Okla., Air Fair & Industrial Exposition.

June 9-21—International Organization for Standardization, Triennial Meeting, Columbia University, New York

June 10—National Fire Protection Association, Special Aviation Seminar, Statler Hotel, New York.

June 16-17—Aviation Distributors and Manufacturers Assn., Mid-Year Meeting, Grand Hotel, Mackinac Island, Mich.

June 17-19—Aircraft Trade Shows, Inc., 1st Annual Exhibition of Aircraft Parts & Equipment, Sheraton Hotel, New York.

June 19-21—American Society of Mechanical Engineers, Applied Mechanics Division, Shock & Vibration Instrumentation Symposium, Pennsylvania State College.

June 23-27—American Society for Testing Materials, 50th Anniversary Meeting, Statler and New Yorker Hotels, New York.

June 26-28—Institute of Navigation, Annual Meeting, Sir Francis Drake Hotel, San Francisco, Calif.

July 4-9—All Women's Transcontinental Air Race, Santa Ana, Calif., to Teterboro, N. J.

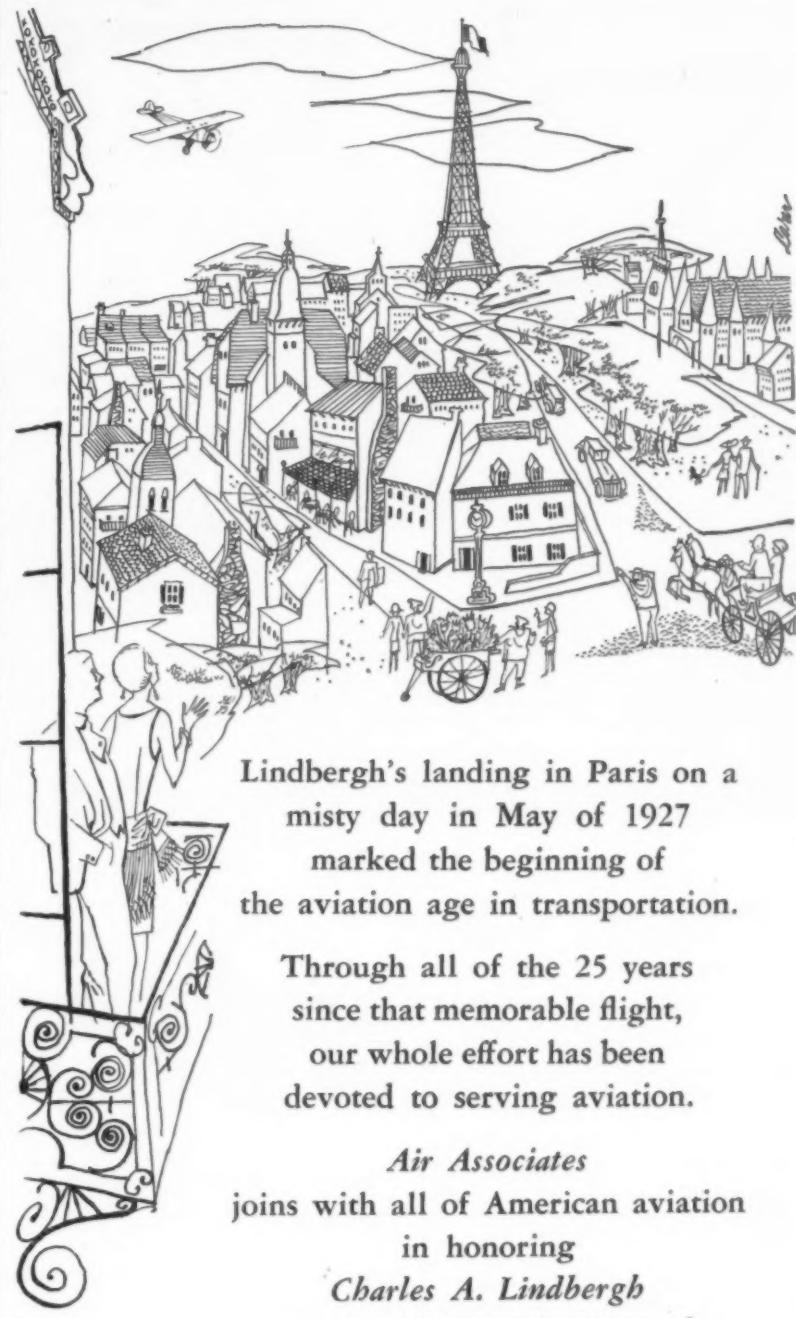
July 8-12—Aviation Writers Association, Annual Convention, Ambassador Hotel, Los Angeles.

International

June 4—Fourth International Mechanical Engineers Congress, Stockholm.

June 18—IATA, 23rd Executive Committee, Brussels.

July—International Soaring Championships, Madrid, Spain.



Lindbergh's landing in Paris on a
misty day in May of 1927
marked the beginning of
the aviation age in transportation.

Through all of the 25 years
since that memorable flight,
our whole effort has been
devoted to serving aviation.

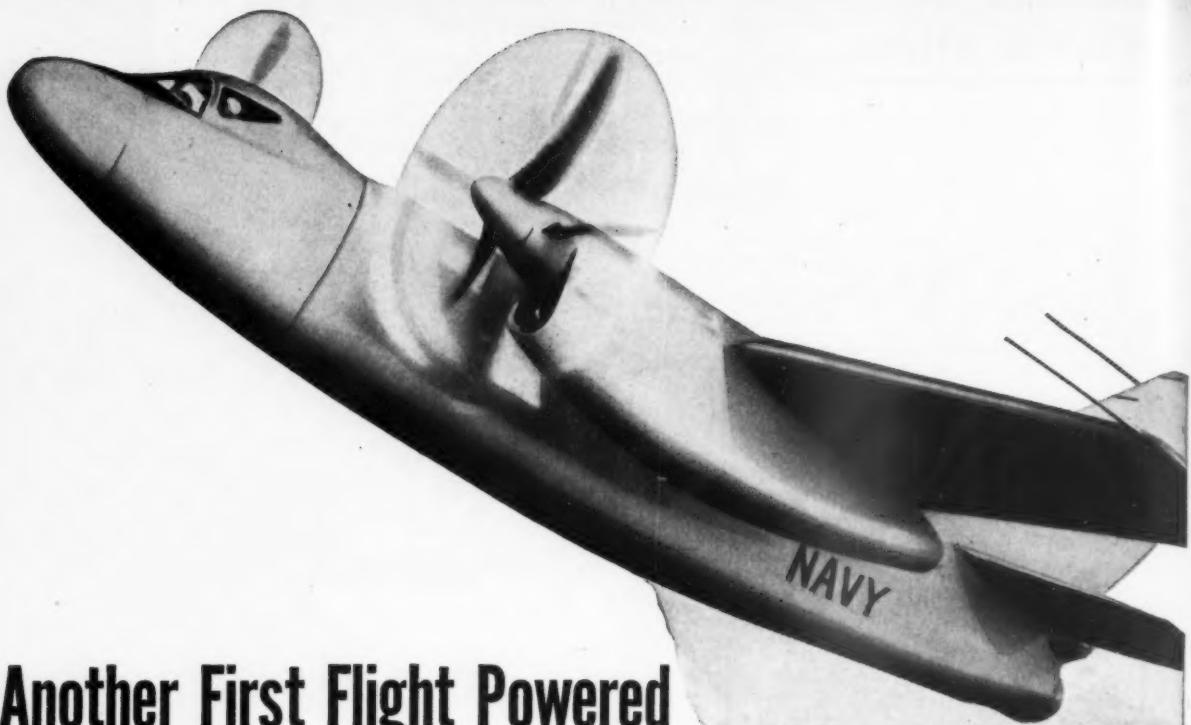
Air Associates
joins with all of American aviation
in honoring
Charles A. Lindbergh
on the 25th Anniversary of
his flight in the Spirit of St. Louis.



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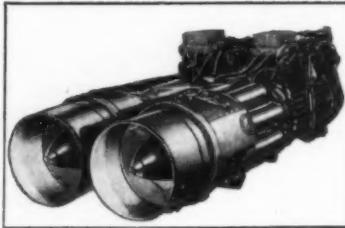
SERVING THE NATION IN AVIATION



Another First Flight Powered With Allison Turbo-Prop Engines

Again Allison T40 Turbo-Prop engines have powered the first flight of a mighty new aircraft—the North American XA2J-1 Savage. A development from the AJ-1 Savage, now in fleet operation, the new Savage will add punch, speed and range to the attack arm of U.S. Navy aviation.

Developing more than 11,000 equivalent shaft horsepower, the two Allison T40's will enable the new XA2J to take off from carrier deck with the heaviest bomb load of all the Navy's carrier-based aircraft. Fully loaded for combat, it will gross more than 26 tons at take-off.



Here is another striking demonstration that, when Allison Turbo-Prop engines replace reciprocating engines, higher power and better aircraft performance inevitably result. Today America has four leading airplanes* flying with Turbo-Prop engines—all of them powered with Allison T38 or T40 Turbo-Prop engines.

*CONVAIR XP5Y FLYING BOAT
DOUGLAS A2D SKYSHARK
ALLISON TURBO-LINER
NORTH AMERICAN A2J SAVAGE



Allison

DIVISION OF GENERAL MOTORS, INDIANAPOLIS, IND.

Builders of J35 Axial, J33 Centrifugal
Flow Turbo-Jet Engines, T38 and T40
Turbo-Prop Engines



DRAWINGS and specifications are plentiful. This is a Boeing drawing of one design proposal, the 473.

Senate Hears Jet Transport Issues Aired

Senate hearings point up lack of unanimity as CAB, industry, Air Force differ on methods, financing.

By JAMES J. HAGGERTY, JR.

THE AMERICAN jet transport might appear no nearer today than it has in the past few controversial years, but there is action on the jet front with these developments:

* The first scheduled flight of the de Havilland Comet I over British Overseas Airways Corp.'s London-Johannesburg route touched off a new round of controversy over the lack of an American jet.

* Civil Aeronautics Board chairman Donald W. Nyrop made a new proposal to provide government funds to foster development of a U.S. jet.

* The Air Force stated flatly that it is opposed to government aid in jet development.

* The Chase C-123A, a test bed for jet engines in a transport type plane, was wiped out by the Air Force.

* Boeing Airplane Co. hit the market with a new proposal for a jet trans-

port, a four-engine design apparently based on the Stratocruiser.

* Civil Aeronautics Administrator Charles F. Horne again urged provision of funds for prototype testing and agreed that it would be a good idea to buy a plane like the Comet I to accomplish such test work.

Old Discussion

The old discussion of whether the government should subsidize jet development came in for a fresh airing as the Senate Interstate and Foreign Commerce Committee opened hearings on three Senate bills pertaining to the subject:

* S. 2344, which would provide international carriers a differential subsidy to make up the difference between the price of a foreign jet and its more expensive American counterpart, if one existed;

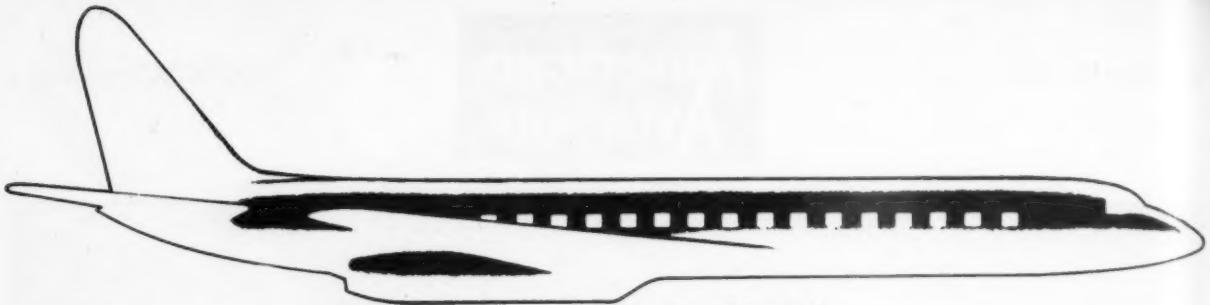
* S. 477, which would provide for

the development of a civil jet transport adaptable to military use;

* S. 481, which would set up an Aircraft Development Corp. to provide transport aircraft adaptable to both military and commercial services.

Nyrop's proposal was made during the hearings. In brief, he proposed that U.S. loans be made available to transport builders equal to 75% of the estimated cost of a jet transport prototype, each loan not to exceed \$15,000,000. (His estimate of the cost is low; other estimates range from \$30-50,000,000.) All such loans would be repayable in 10 years at an interest rate of one per cent a year. The lending agency would consult with CAB on the suitability of the jet to be developed before making the loan (a clause not likely to appeal to some of the manufacturers, chiefly Douglas, who do not want any sort of government handcuffing in their development programs).

Under Nyrop's proposal, the manufacturer would have his debt reduced at the rate of \$1,000,000 on each of the first 15 planes sold, or one-fifteenth of the total loan if he borrowed less than the maximum.



LOCKHEED DESIGN, as presented in artist's sketch.

If any airline wanted to test the prototype so developed, CAB would underwrite the operation in cargo or mail service for one year to permit breaking even on the operation. All information so gathered would be made available to all manufacturers, all airlines, the CAA, and the CAB. A minimum of 2,000 hours would be required during the test year.

Nyrop pointed out these advantages for his proposal:

- **Provision of immediate working capital with which the manufacturer could start work.**

- **Incentive to the manufacturer,** because the sale of 15 planes would permit a write-off of 75% of the development cost (but only assuming it did not top \$20,000,000).

- **Manufacturers would have a definite stake of 25% of the development**

cost, plus the cost of tooling for production.

- **The new planes** would undergo a thorough service test before being put into operation.

At the same hearing, the Air Force dashed cold water on the hopes of any who might have expected support for prototype development from that quarter. A letter from Assistant Secretary Edwin V. Huggins, read to the committee by Col. John B. Bridges, stated flatly that the USAF opposed any development legislation "because of the possibility of diversion of the aircraft industry's capacity for research, development and production during the present period of military expansion."

Asked by a committee member how the Air Force would feel about a manufacturer going ahead with a jet development without government aid, Bridges

said the USAF would still be opposed to it on the same grounds, introducing the novel idea that the Air Force, which has been in part responsible for the lag in jet development by holding manufacturers to such slim profit margins that they can not afford to put their own money into new development, feels that it should also have a say in commercial development.

Meanwhile, the Air Force cancelled its only jet transport project, the Chase C-123A. Although euphemistically referred to as a jet transport, the C-123A could hardly be called more than a crude forerunner of a commercial turbine-powered plane.

Actually, it was an airframe of the C-123 assault transport variety, with a pair of General Electric J-47 jets substituted for the normal piston engines. Designed for rough assault work, it probably would have contributed little to development of a commercial airliner, except that some engine experience might have been obtained from a thorough test program.

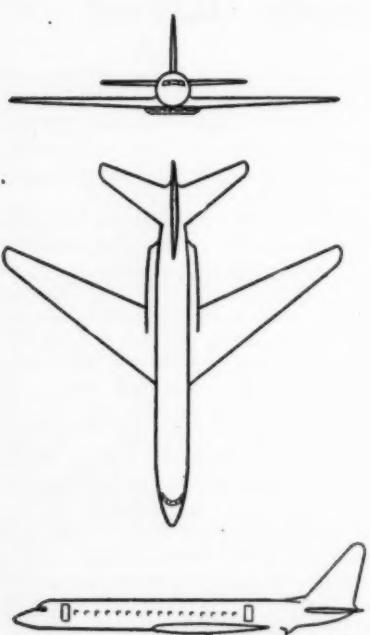
Engines Needed

Main reason for the cancellation appears to be the need for the engines elsewhere—they are the same type as those used on the Boeing B-47 jet bomber. The C-123A cancellation is just one more indication of the Air Force's attitude toward jet transports.

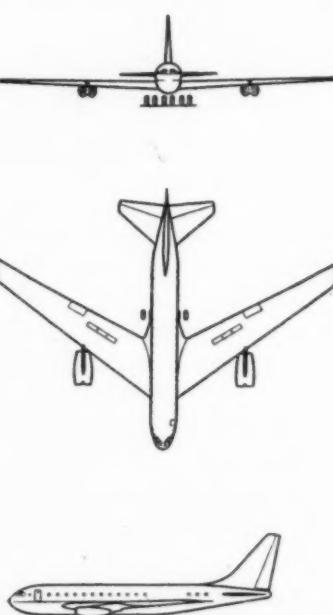
The suggestion that the U.S. ought to buy a Comet I for use in a flight test program was made during the Senate hearings. While Horne was testifying in behalf of the advantages of a jet testing program, Sen. Edwin C. Johnson (D., Colo.), committee chairman, tossed out the suggestion that perhaps purchase of a Comet might expedite the program. Horne replied, "Senator, you are so right."

The views of the nation's transport manufacturers were given to Johnson's committee by Adm. DeWitt C. Ramsey, president of Aircraft Industries Association. They are:

- **Boeing Airplane Co.** feels that the practical solution would be for the government to foot the complete bill for



Lockheed 193



Boeing 473

SHAPE OF THINGS to come is emphasized in these three-view drawings of the two proposals which have had wide circulation. Douglas's proposal is still a well kept secret and even the Lockheed and Boeing designs have undergone major changes.

Principal Characteristics of Civil Jet Transports

(Approximate Values)

Manufacturer & Model	Jet Transports					Comparative ¹ Piston Engine Airplane Values (Douglas DC-6B)
	De Havilland Comet I	Comet II	Avro Jetliner	Lockheed L-193	Boeing 473	
Powerplant	four Ghost I @ 5,000#	four Rolls Avon @ 6,500#	four Rolls Derwent 5 @ 3,600#	four 12,000# jet engines	four 9,250# jet engines	four R-2800
Gross Weight	105,000#	115,000 to 120,000#	65,000#	148,000#	135,000#	107,000#
Typical Payload and	13,500# 36 pass.	13,500#	10,000# 40 pass.	14,800# 48 pass.	16,000# 60 pass.	14,000# 54 pass.
Distance (miles)	1,500 ²	2,250	600		2,000	2,700
Cruising Speed	About 470 mph	About 500 mph	430 mph	564 mph	500 mph	285 mph
Altitude	35,000'	40,000'	30,000'	35,000'	40,000'	20,000'
Field Size	6,300'		Approx. 5,000'	5,000'	6,150'	6,350'
Initial Cost	(\$1,260,000)	(\$1,442,000)			Around ³ \$2,500,000	\$1,100,000
Direct Operating Cost (cents per ton-mile)	May be up to 30% higher than DC-6B		\$0.13	Less than DC-6B	\$0.10	Approx. \$0.14 (Approx. \$0.10 in domestic operation)

¹ Based on over-ocean operation.

² Comet being operated on London-South Africa route with a 7000-pound payload over a 1360-mile maximum stage length.

³ Based on production of 100 aircraft.

jet development, with the airlines buying the production planes, also with government assistance.

• **Consolidated Vultee Aircraft Corp.** believes the first step should be a test program using an existing jet plane. Only after this data has been collected can the next step be determined.

• **Douglas Aircraft Co.** does not want any government assistance because of the limitations, controls, and influences which go with such aid.

• **Lockheed Aircraft Corp.** indicated that the best way the government could help would be to permit the airlines to make enough money so that they could handle their own purchases. As an alternative, Lockheed believes that the differential subsidy bill might serve the purpose.

• **The Glenn L. Martin Co.** does not believe in the differential subsidy. In the company's opinion, the Air Force should develop its own jet transports and let the manufacturers build commercial versions.

Thus, it is obvious that even among the manufacturers there is no unanimity of opinion. Douglas and Lockheed lean toward independent development, Boeing and Martin look for government help, and Convair is treading a noncommercial tight-rope somewhere in between.

Matching its opinions with action, Boeing is reported trying to get the Air Force to sponsor development of a jet version of its Stratocruiser, which would probably be the springboard to the aforementioned Boeing 473, a brochure on which is now being circulated.

The 473 design is a four-engine transport with a fuselage that is similar to, although cleaner than, that of the Stratocruiser. Its wings are sharply swept back and the engines are slung in pairs in under-wing nacelles. The engines are of unspecified type, but would develop 9,250 pounds thrust at sea level.

Smaller Design

The plane is somewhat smaller than other proposed jet designs, grossing 135,000 pounds at take-off. It would carry from 60 passengers in a standard version to 97 in a high-density model and cruise at 500 miles per hour at 40,000 feet, with a gross take-off weight of 125,000 pounds.

Here are some other specifications as listed in the Boeing brochure:

Design landing gross weight	120,000 pounds
Empty Weight	77,780 pounds
Useful load	57,220 pounds
Payload (cargo included)	16-23,000 pounds
Cargo	3-5,000 pounds
Wing span	140 feet 2 inches
Wing area	2,300 square feet
Overall length	111 feet 11 inches
Overall height	38 feet 9 inches

Max. speed normal rated power
at 125,000 pounds ... 580 mph at 40,000 feet
Rate of climb, SL, normal power
at 125,000 pounds 3,600 feet per minute
CAR take-off field length, SL
at 135,000 pounds 3,950 feet (dry)
CAR landing field length at 112,000
pounds 2,850 feet (wet)
CAR landing field length at 112,000
pounds 6,150 feet (with brakes only)
5,050 feet (brakes plus chute)

Start of an Era

MAY 20-21 marked the 25th anniversary of one of aviation's greatest feats. Charles A. Lindbergh, then 25, successfully completed the first non-stop solo flight across the Atlantic. He flew from Roosevelt Field, New York to Le Bourget Field, Paris, via Newfoundland, Ireland and England, in 33 and one-half hours. The flight marked the start of the multi-million dollar business that carried more than 300,000 people across that ocean in 1951.

Lindbergh's plane, the "Spirit of Saint Louis," was a Ryan NY-P high wing single engine cabin monoplane with a 46 foot wing span and a gross weight of 5,250 pounds, powered by a Wright J-5C Whirlwind rated at 223 horsepower at 1,800 rpm. He had about 450 gallons of fuel available for the flight in two fuselage tanks and three wing tanks.

Industry Cooperation Keynote in Europe

Aircraft manufacturers on Continent move toward pooling of production, research facilities.

CONTINENTAL European aircraft manufacturers are taking an historic step toward pooling production and research facilities to serve the needs of NATO countries, according to an exclusive interview given to Wayne W. Parrish, editor and publisher of AMERICAN AVIATION PUBLICATIONS, by Georges Hereil, chairman of the French Air Industries Association (Union Syndicale des Constructeurs Aeronautiques).

French, Italian, and Dutch manufacturers were described as particularly active through their participation in the International Association of Aircraft Manufacturers. This group was only recently reactivated and reorganized with the goal of uniting all continental aircraft manufacturing into a working combine to spread production around, increase capacity and coordinate research.

Hereil declared the program was a major advance toward tying Europe together.

The trend, he said, was imposed upon the European aircraft industry whose resources were not efficiently employed to serve the needs of NATO countries because they have been organized only on a national basis with very limited funds.

In answer to charges about employment of Communists in the European aircraft industry, Hereil asserted that in France Communists have been systematically eliminated from responsible jobs since 1946. His own factory, SNCASE, has not had a single case of sabotage reported for more than a year.

Unemployment in the European aircraft industry, he said, is doubly detrimental to the NATO community because it tends to foster communism and also neglects available production facilities and experienced engineers and workers who could make a useful contribution to the rearmament of the free world.

Cooperative Orders Needed

Desperately needed now are orders which the European manufacturers can fulfill on a cooperative basis.

Several examples of international cooperation were cited:

In construction of the British Venom, the Italian company FIAT produces the Ghost engines, while the

British firm de Havilland sends airframes to the French industry which assembles the fighters.

In production of the American-developed Sikorsky S-55 helicopter, while negotiations are pending with the German industry (B.M.W.) to turn out the engines and with the Swiss industry to produce equipment, the Italians would ensure the construction of the rotors and the French would build frames and assemble the craft.

Continental manufacturers, Hereil revealed, were willing to participate in building British Comet jet transports. But cuts in the British military production program made the Short Brothers & Harland Ltd. plant at Belfast, Northern Ireland, available for building Comets. The Continental firms had been in a position to accept the prices specified by de Havilland for the Comet.

No 'Alpha' for ALPA

Clarence N. Sayen, president of the Air Line Pilots Association, has notified CAA and ICAO that the more than 8,000 ALPA members have been advised not to use the new international phonetic alphabet for radio-telephone communications for the time being "until a satisfactory revision is available." The alphabet went into effect April 1 for a six-month experimental period.

ALPA's Washington representative, Larry Cates, told AMERICAN AVIATION that ALPA feels that the old alphabet, widely used in World War II, is already familiar in other countries through education and repetition. The new one will only create a new language barrier, he stated. It does not, for example, help Israeli pilots to pronounce W's or Japanese pilots to pronounce R's.

Casey Jones Schools To Celebrate 20 Years

The Casey Jones School of Aeronautics and the Academy of Aeronautics observe their 20th anniversary on May 31. All alumni have been invited to attend a celebration at the Academy of Aeronautics, LaGuardia Airport.

Among those scheduled to participate in the ceremonies are Lt. Gen. Robert Harper, head of USAF training; Adm. W. D. Johnson, in charge of Navy technical training; CAA Administrator Charles F. Horne; CAB Chairman Donald W. Nyrop; Rear Adm. Emory S. Land of ATA; and Mundy I. Peale, president of Republic Aviation Corp., representing AIA.

BNF Plans KC Hangar

If the Braniff Mid-Continent merger is approved, Braniff officials are planning to construct a \$600,000 maintenance hangar at Kansas City, since it would be an important junction point on the combined system.

Hintze Heads New Engine Overhaul Firm

A newly-organized engine overhaul company—Aviation Power Supply, Inc.—is headed by Frank Hintze, former assistant to the president and assistant secretary of Pacific Airmotive Corp. Located in a new building on the north side of Lockheed Air Terminal, the facility's address is 3111 North Kenwood, Burbank.

Other officers are two former PAC vice presidents, Elmer Hanson, formerly in PAC's customer service department at Burbank, Oakland, and Linden, N.J., and William Kattelman. William M. Whitney, formerly of Boston, is secretary-treasurer.

Hanson is in charge of contract administration and sales and Kattelman is to be engine shop superintendent. The engine shop is equipped to handle all P&W engines up to R-2800 B's, Hintze said, and equipment includes a machine shop and facilities for outside inspection work.

ICAO Dictionary Ready

An English, French, and Spanish aeronautical dictionary, compiling terms used in international civil aviation, has been prepared by the International Civil Aviation Organization, in an effort to clear up misunderstandings of 2,500 commonly used terms in the three languages. The lexicon is the result of five years of study and development by technicians and linguists.

3 Named to FSF Board

Theodore P. Wright, J. Carlton Ward, Jr., and Reginald M. Cleveland were named to the governing board of Flight Safety Foundation, Inc., at a special meeting of the Board of Governors recently.



SE 2010, France's four-engine Armagnac, has been handed over to Transports Aeriens Intercontinentaux for evaluation

tests. Tests will last 400 hours, during which the airplane will be flown between France, Morocco, and Dakar carrying freight.

FRANCE— Today and Tomorrow



SO 60, a twin-engine jet transport proposal of France's SNCASO, would feature engines in underslung pods. SO 60 is one of a group of designs being studied by the Ministry of Civil Aviation, one of which will probably be developed under government contract.



SNCASE design proposal is a three-engine transport with all engines buried in the fuselage aft of the passenger compartment. Proposal calls for three 6,000-pound-thrust Atar jets.



SLICK GENERAL headquarters at Burbank, Calif., with one of its three DC-6A's in the foreground.

Slick Finds DC-6A's Send Costs Down, Traffic Up

With its first one a year old on May 16, line sees a saving of one-half cent per ton-mile flown.

By FRED S. HUNTER

ON MAY 16 Slick Airways had its Douglas DC-6A in service for one full year.

The results, according to Thomas L. Grace, Slick president, are all to the good. The airplane's operating economies are fulfilling expectations and, in addition, it definitely is attracting traffic.

The initial DC-6A has logged 3,000 hours of flight time, flown approximately 700,000 miles, and lifted about 7,500,000 ton-miles of freight. Average load factor has been approximately 77%, and average utilization 8.3 hours per day.

Planes Rotated

Slick now has three DC-6A's engaged in three widely different types of operation. One serves a thrice-weekly transcontinental common-carriage schedule between New York and Los Angeles. A second is on a military charter calling for 50,000 miles per month or more for the Air Force. The third is leased to Pan American World Airways for overseas

schedules out of New York alternately to Europe and Puerto Rico.

Slick rotates its three airplanes between the three operations, except for its first plane, N90806, the Douglas prototype for the A and B configurations in the DC-6 series, which has not been converted for overseas operations. Both N90807 and N90808 have been flown overseas by PAA.

Since Slick became the nation's largest domestic air-freight carrier flying C-46's and still operates 20 of the Curtiss ships, evaluation of the DC-6A in this carrier's service inevitably leads to comparison with the twin-engine craft.

Since the largest single item of cost for an air-freight carrier is operating expense (at Slick it represents 65% of total costs), the fact that the DC-6A equipment is operating at approximately one cent per ton-mile less than the C-46 equipment is not a matter of minor significance.

The direct maintenance account on

the DC-6A equipment is a little on the low side because in the first months of operation some cost items in the overhaul cycles have not yet caught up. Henry P. Huff, Jr., vice president of operations, estimates that as overhaul cycles come around direct maintenance on the DC-6A's will be approximately the same as on the C-46's calculated by the ton-mile yardstick. That will still leave the DC-6A with an advantage of more than half a cent per ton-mile.

Through a tight fuel-economy program, Slick has reduced its DC-6A fuel consumption to less than 400 gallons per hour, block-to-block. Slick's operating procedures call for the use of 1,150 brake horsepower per engine in the operation of the DC-6A at weights above 92,500 pounds. At weights below 92,500 pounds, 1,100 bhp is used.

Business Increased

Normally, Slick's flights stay on low blower and cruise at 16,000 and 17,000 feet. The flight engineer, who establishes power settings at the orders of the first pilot, is responsible for a continuous check of fuel consumption.

Regulations call for head temperatures to be kept within 10°.

Slick's overhaul period for the P & W R-2800-CB-16 engines is presently 1,000 hours, but application has been made for 1,100 hours. As of April 4, eight scheduled engine changes had been accomplished on aircraft N90806 after an average utilization of 884 hours and during the same period this aircraft incurred three non-scheduled changes after an average utilization of 451 hours, making overall utilization of the 11 engines 766 hours.

Slick's experience indicates that in commercial operation one DC-6A will

What Slick's Aircraft Cost to Run

Direct Expenses, May, 1951, through February, 1952

	C-46		DC-6A	
	Cents/Mile	Cents/Ton-Mile	Cents/Mile	Cents/Ton-Mile
Flying operations	30.3	4.7	42.6	3.0
Direct maintenance ...	8.9	1.4	13.8	1.0
Depreciation	0.8	0.1	16.5	1.2
Total	40.0	6.2	72.9	5.2

do the work of 3.6 C-46 aircraft. By the first part of 1953, when Slick will have six DC-6A's in operation, it will in effect have doubled the airlift capacity of its 20 C-46's.

The carrier's records show its overall business was substantially increased by the introduction of the faster, modern equipment. C-46 volume remained about the same, but the total volume of traffic increased approximately 600,000 ton-miles per month with each DC-6A added.

5,000 Cubic Feet

Before it acquired its DC-6A's, small lightweight shipments, particularly flowers from the West Coast, accounted for 50% of Slick's eastbound tonnage. Now such orders account for less than 25% of the tonnage, although the total volume of flowers carried has increased.

Similarly, apparel formerly was the main westbound commodity. Now it is far overshadowed by heavy machinery, electronic equipment, pharmaceuticals, and machine parts.

Total cargo capacity of the DC-6A is approximately 5,000 cubic feet, but Slick rarely uses the 600 cubic feet contained in the belly compartments, because of the relative difficulty of loading and unloading.

It takes Slick approximately the same time to load a DC-6A as it does a C-46, and the latter holds just about half the load. The bigger airplane bulkloads as well as the twin-engine job, and Slick has found it unnecessary to make use of segregation nets.

Large Doors

Foremost of those factors tending to decrease the cost and time required to load or unload a unit amount of freight are the very large DC-6A cargo doors. The main door aft is 124 inches by 78 inches (this compares with 98 inches by 71 inches in the Douglas DC-4 air freighter) and the forward door is 91 inches by 67 inches. The two doors make possible symmetrical loading or unloading and obviate the necessity of shifting cargo to maintain balance. They also permit simultaneous loading and unloading.

Slick regards the airplane's "space efficiency" as slightly superior to the C-46, and the level floor is a definite advantage in moving dense freight within the airplane. The 20-inch grid pattern of tiedown fittings installed on the sidewall as well as in the floor makes cargo tiedown substantially easier, Slick reports.

HEAVIEST SINGLE piece of commercial air freight ever flown, 23,000 lb. steel shaft, is shown being unloaded after a nine-hour flight from Philadelphia to Burbank.

Slick's Periodic Inspection Record on DC-6A's

Check No.	Hours Between Checks	Average Man-hours/Check	Average Material/Check
1	80	194	\$78
2	150	408	167
3	300	472	130
4	1200	550	478

A distinct advantage is the air conditioning system enabling crews to maintain temperatures within narrow tolerances required for many perishables. In the unpressurized C-46, the spread between the forward section and the aft section may be as great as 15°.

Performance-wise, the block-to-block speed of approximately 260 mph of the DC-6A equipment in Slick's operation enables the freight carrier to give East Coast shippers overnight delivery to the West Coast, and Los Angeles shippers overnight delivery to Chicago.

The aircraft's zero fuel weight is 83,200 pounds, and the operating weight empty is 55,200 pounds, making the maximum weight limited payload approximately 28,000 pounds.

Using CB16 engines, the Slick freighters currently are limited to a maximum gross takeoff weight of 100,000 pounds, leaving a weight allowance for approximately 2,800 gallons of fuel, ample for the 1,496-mile flight from Los Angeles to the refueling point, Kansas City, nonstop with a full payload.

Prevailing headwinds reduce the

operational block-to-block distance of the airplane westbound and at a gross takeoff weight of 100,000 pounds Slick has to sacrifice some payload for gas.

Slick, however, soon will be able to go to 102,800 pounds for maximum gross takeoff by adding automatic feathering. This is a corollary of the recent 107,000-pound certification of the Pan American version of the DC-6B using CB17 engines (108/135 grade fuel) and automatic feathering. The DC-6A will be authorized for 103,000 pounds using the 108/135 fuel (without the automatic feathering) or for 102,800 pounds using the automatic feathering (without the premium fuel). Slick chooses to continue using 100/130 grade fuel, but to apply automatic feathering to provide the weight margin which will allow it to carry full payloads on the westbound Kansas City-Los Angeles leg.

Comparative performance of Slick's C-46's is an operational block-to-block speed of 175 mph and an operational block-to-block distance of approximately 600 miles, with a maximum takeoff gross weight of 48,000 pounds and a payload capacity of 12,200 pounds.



Seniority List Set for PAA-AOA Pilots

Arbitration board majority decides to give 2/3 weight to length of service, 1/3 to ratio by category.

By ERIC BRAMLEY

IN an important decision which may figure in other merger cases, an arbitration board has established a composite seniority list of Pan American World Airways' pilots and those employed by American Overseas Airlines who became PAA employees following merger of the companies in 1950.

The decision, to which the PAA pilot representative on the board, Frank W. Saul, dissented, followed months of settlement attempts, including efforts by the CAB, David L. Cole, neutral arbitrator, and Emery J. Martin, representing AOA pilots, formed the majority.

New Approach

In a new approach, the board's majority decided to give 2/3 weight to length of service, and 1/3 weight to ratio by category in integrating the seniority lists. Its reason for selecting this system was not explained in the decision. Ratio by category would mean an integration of the lists on the basis of the relative number of pilots employed by PAA and AOA in each category (pilot, master co-pilot, first co-pilot, etc.)

The new list is retroactive to January 11, 1952, the date on which the National Mediation Board stepped into the dispute. Both sides agreed to abide by the board's findings.

PAA pilots had claimed that the

combined lists should be established on straight length of service with PAA. The PAA management had suggested that the AOA pilots be inserted into the PAA seniority list in line with length of service they had with American Export-AOA, while AOA pilots favored a straight ratio-by-category proposal.

The board majority, however, refused to use any one of these proposals by itself. Instead, it set up two integrated lists of AOA and PAA pilots, one showing the positions they would have if straight length of service on American Export-AOA and on PAA were used, and the other if ratio by category were used, both as of September 25, 1950, the merger date.

"We then ascertained the difference between the position of each pilot on the two lists," the board said. "Having decided that both length of service and status should have weight but that length of service should have the greater weight, we have determined what is one-third of the difference between the numbers on the two lists and have modified the position on the length of service list by this one-third.

"Where the length of service list number is larger, this one-third has been subtracted from the length of service number, and where it is lower than the ratio by category list number then the one-third adjustment figure has been

added to the length of service number, in order that the resulting figure reflect the influence of both lists.

"The resulting figure has been treated as an index number, to be used in sequence with all other index numbers in the series in placing the positions of the ex-AOA pilots on the composite list in relation to the veteran PAA pilots. In cases of identical index numbers, or ties, the preference has been given to PAA pilots, because of their greater length of service."

In its decision, the board observed that "there is obviously an essential difference between ordinary new employees and a body of employees brought into a company through the amalgamation of two enterprises. In such a situation the new employees have not voluntarily sought employment with the surviving company. . . .

'Most Unfair'

"To suggest that pilots whose planes and routes are turned over to another company should, irrespective of their experience and status, start all over again as junior co-pilots at the bottom of another seniority list, while the pilots of the other company take over their jobs, seems most unfair."

Such a plan "gives no weight whatever to the status already attained by the AOA pilots, nor any credit for the contribution of equipment, routes, and jobs made by AOA. It does not take any account of the manner in which the AOA pilots came to PAA."

The PAA management plan, it added, would give practically no consideration to the status of AOA pilots "because of the disparity in ages between this operation and that of PAA. . . . The most senior AOA captains would now barely be eligible for the most junior captaincies at best."

The AOA pilots' proposal, it said, "recognizes no value in length of service, and it makes no allowance for the benefits or gains which the AOA pilots will have as a consequence of the merger."

Saul asserted that the majority's solution "adjusts the length of service position of an AOA pilot upward a completely artificial one-third recognition of the position the pilot would hold under the ratio by category plan. The positions of the PAA pilots are correspondingly reduced. No explanation appears in the decision of the majority as to why a factor of one-third was adopted. . . ."

Saul said that AOA pilots should be integrated "in precisely the same manner as was used in the case of every other pilot in the employ of PAA. That rule was to assign to each pilot a seniority date determined by the date of his employment by PAA."



Piasecki YH-21, shown in its first flight, grosses more than 14,000 pounds, flies at speeds up to 125 miles per hour, and reaches altitudes up to 16,000 feet. Powered by a Wright R-1820-103 engine, the YH-21 will see service in the USAF's Rescue Service.

Lines Won't Make More Money Than Needed

Nine reasons advanced for rate adjustments; would help make industry sound, ATA official asserts.

By STUART G. TIPTON

General Counsel
Air Transport Association of America

A SHORT TIME ago most of the domestic trunk lines and some of the local service lines filed tariffs calling for a modest upward adjustment in their passenger rate structures. Most of these carriers proposed to increase the price of each ticket by one dollar, and to eliminate a five percent discount on round-trip tickets. This was a modest increase, calculated to yield the industry only about \$28,000,000 annually. The one dollar increase, which accounted for \$16,000,000, could hardly be regarded as more than a fare adjustment, designed to compensate the carriers partially for the high cost of handling short-haul traffic. The elimination of the round-trip discount was characterized by one airline executive as the withdrawal of a costly "salesman's gimmick" which, during this time of high-traffic volumes, was not necessary.

Surprise and Skepticism

However, the filing of these tariffs with the Civil Aeronautics Board followed very closely upon the announcement of the airlines' 1951 financial results. The industry as a whole, had just completed its most profitable year. Consequently, the increase in tariffs was met with considerable surprise, and no little skepticism.

Members of the Board and its staff were obviously concerned lest the airlines make too much money. Of course, the Board must always give attention to the question of whether particular rate levels will yield the carriers unreasonable profits, because the statute it administers says it must. However, this same statute requires the Board to foster an economically sound industry, adapted to meet the needs of the commerce of the United States, the postal service, and the national defense. This being the case, the possibility that the airlines might make too much money deserved very slight attention, for the chance of their actually doing so is so remote as to be virtually irrelevant at the present time. There follow nine reasons why this is so.

* Airline unit costs are going up, and total costs are climbing more rapidly

than revenues. Cost increases are noticeable in most categories. One example is that of pilots' pay. Increases of 1952 over 1951, percentagewise, have ranged from 11.3% to 18.0% for the Big Four, and from 11.4% to 18.3% in the case of other trunkline carriers.

It is a characteristic of the commercial air transport industry that profit outlooks may change virtually overnight, and the airlines are in the process of proving that again. Since mid-1951 airline operating expenses have been increasing at a faster rate than revenues. Two instances come to mind showing the effect of this trend. In January, 1952, net operating income of the domestic trunks was \$2,900,000, compared to \$6,400,000 in January, 1951. In February, net operating income of all but four of these lines was \$800,000, compared to \$1,900,000 in 1951.

An interesting comparison is that of operating expense per revenue ton-mile for the domestic trunk airlines in the postwar period.

1946	48.78c	1949	53.79c
1947	54.18c	1950	47.91c
1948	58.24c	1951	45.70c

From a high of about 58.24c in 1948, costs per unit dropped to 45.70c in 1951. In June 1951, operating expenses per revenue ton-mile were 43.96c. By January 1952, unit expenses had

jumped to 50.91c, as compared with 47.31c in January 1951; and in February 1952 the 16 carriers reporting showed costs of 52.70c as compared with approximately 47.72c during the same month the year before.

This period has seen increases in all of the items that the airlines are required to buy, as well as increases in payments to their employees. During this period the railroads have raised their passenger and freight rates many times in order to keep up with their rising unit costs. They recently received an increase of 95% in their mail compensation.

Notwithstanding the fact that all of the economic forces would require increased costs and increased prices to the public, airline unit costs have been going down. Commercial rates have not been raised significantly, and mail rates on the domestic trunk lines have been reduced from a high of \$1.28 per ton mile in 1948 to 59c in 1951. As airline representatives have frequently had occasion to say, the airlines could not continue this performance forever. It was based upon the movement of high volumes of traffic in modern, more efficient, aircraft, with improved operating procedures.

There had to come a time when the increasing prices and wages would overcome these counteracting forces. That time came in the third quarter of 1951, and the airline first-quarter results of 1952 are not comforting. They should give anyone reason for concern that the airlines—particularly those recently

STUART G. TIPTON, general counsel of the Air Transport Association, has had 15 years' experience in dealing with all types of commercial air transportation problems. Highly regarded in the industry, he has been the airlines' principal spokesman at Congressional hearings on many important legislative matters. He has also been the industry representative at numerous international aviation conferences.

Born in Knightstown, Ind., Tipton graduated from Wabash College and later received his law degree at Northwestern University. He went to work for the Resettlement Administration in Washington, later joining the legal staff of the U. S. Treasury Dept.

While a member of that staff, he shared in work on bills which later became the Civil Aeronautics Act of 1938, and also handled other types of legislation for the Treasury.

For six years he served as assistant general counsel of the Civil Aeronautics Authority, specializing in economic regulation, safety and enforcement. He joined ATA in 1944 as general counsel, served as acting head of ATA following the death of Col. Edgar S. Gorrell in 1945, and returned to his duties as general counsel in January, 1946.

placed on service rates—would make far too little money rather than too much.

• But even if airline costs could be kept at the 1951 level, efforts to secure increased revenues should be encouraged. In the past five years airline profits have not been sufficient to build up adequate reserves for adverse business conditions on the one hand, or expansion needs on the other. It is true that in 1951, after taxes, the net income of the industry, excluding purely international carriers, represented a return on investment of 7.24 percent. However, this is not a large return, and must be balanced against very heavy losses in 1946, 1947, and 1948 which amounted to \$40,463,224. The ratio of net income to net assets was 3.51 in 1949, 6.33 in 1950, and 7.24 in 1951. The average for the post-war period is two percent.

The Board's responsibility relates to the economic soundness of an industry—not to a few airlines. If rate levels are to be geared to the financial results of a few airlines, the remainder of the industry in time would either be destroyed financially or required to come to the Board for subsidy.

• The airlines must pay for their airplanes. Since the close of the war the total net income of the airlines has been \$60,900,000—about enough to buy 60 modern four-engine planes at prevailing prices. Since the close of the war the airlines have bought over 500 such airplanes. As of January 1, 1952, the domestic airlines had on order, for delivery in 1952, 1953, and with a few scheduled for 1954, 188 two-engine aircraft and 103 four-engine aircraft, including 25 DC-7's.

\$300 Million Needed

Thus, during the next two years approximately \$300,000,000 will have to be secured to pay for airplanes now on order at the same time that the airlines are paying off the indebtedness arising from their postwar purchases. Without regard to the profit levels which may be permitted this industry during the next two years, airline managements will have many anxious hours.

• This financing problem is made particularly hard in the face of current tax burdens. With respect to 1951, out of every dollar of airline earnings 52 cents must go to the government in income taxes, and some airlines will be required to pay over 60c. The economic soundness of the industry must be judged on the basis of the amount of money it retains to pay for airplanes, to lay up in reserve for sadder times, and to pay to stockholders who may thus be persuaded to entrust additional money with the airlines.

One airline executive graphically demonstrated how difficult it is under present tax laws to secure money for this

purpose. He pointed out that, in order to get \$40,000 to keep, an airline had to earn \$100,000, and that in order to earn \$100,000 it had to sell \$1,000,000 worth of transportation.

• The financing of the present fleet may be regarded as a very difficult feat, but there is more to come. Before too long the airlines will have to take the responsibility for introducing the jet transport into domestic operations. Considerable credit must be given to British forecasts of trans-Atlantic and trans-Pacific service in jet transports by 1954.

Whether the jet will be introduced into domestic service within three years or seven years makes little difference for the purpose of this discussion, for the airlines must be prepared economically not only to purchase the airplanes at very high prices, but also to undergo the very costly process of putting them into service.

• Everything possible should be done to permit the industry to continue its progress toward self-sufficiency. During the past year the Board, in deciding rate cases, has placed seven of the 15 domestic trunklines on a service mail rate. A number of the carriers accepted these rates with full knowledge that they would be hard put to it to maintain their service at a rate so far below that which they had earned before. They recognized that only through the development of maximum commercial revenues could they remain out of the subsidy class.

The Board's representatives have spoken with great pride at their achievement in reducing mail compensation so sharply. Industry representatives have spoken with equal pride that a major part of the industry was operating without subsidy. Under these circumstances, it seems only sensible to permit the industry to use the greatest possible ingenuity in maintaining and increasing its commercial revenues.

• So many things seem to happen to the airlines. Space is too limited here to review in detail the postwar history of the airlines, but those who have followed it will recall that when the airlines seemed to be making real progress events occurred which impaired their ability to do so. Strikes, unfortunate accidents, equipment groundings, and the like made it hard for airlines to expand their business, provide a good public service, and keep on an even keel financially. The airlines did well last year, but in the early part of 1952 there came a series of aircraft accidents in the New York area which closed Newark Airport, created serious disruption in the service to the New York area, and threatened to close the other two airports serving New York. The closing of Newark resulted in heavy financial losses to the airlines serving the New York area.

Now, in this critical season, the industry is faced with a gasoline shortage which disrupts schedules, inconveniences the public thus damaging the airlines' competitive position, and costs the airlines millions of dollars.

Events of this sort are part of the airline business, and anyone having responsibility for the economic soundness of the industry must do his planning with the objective of establishing an industry on a sufficiently solid economic base to weather, without great difficulty, these frequent storms.

Glittering Plans

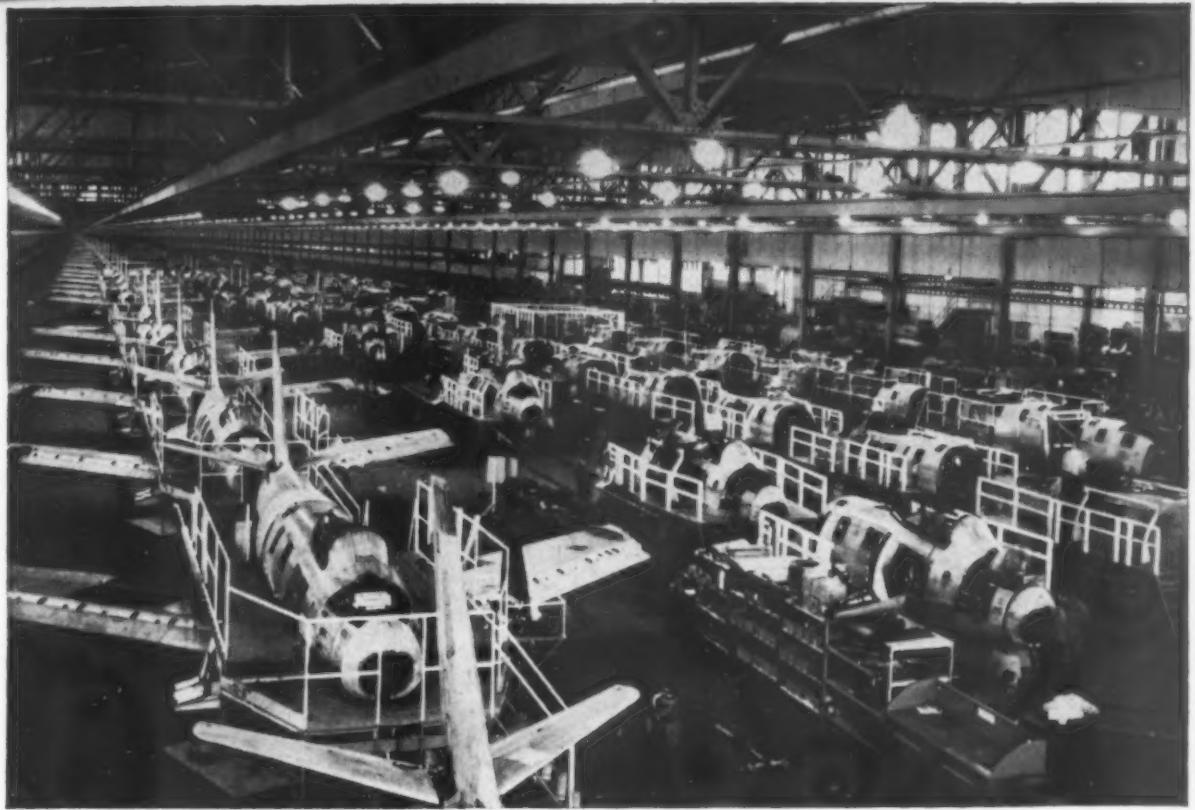
• Whenever the airlines make a nickel our major surface competitor is prepared to come forward with glittering plans for the expenditure of at least four cents of it. The railroads have been urging for years, and with ever-increasing vigor, that the airlines be required to pay user charges for airways.

It is reported that studies are being conducted now by the Department of Commerce looking toward the eventual assessment of user charges against airlines and the users of the inland waterways. Without regard to the soundness of the public policy involved, cautious airline management must be free to give attention to these prospective cost increases.

• Finally, there is reason to believe that current conditions in general business are somewhat unsteady. If business conditions deteriorate, common carrier transportation, and particularly air transportation with nearly half of its traffic in the business category, will certainly feel adverse effects. During 1947 and 1948, when the airlines were experiencing their private business depression, one airline executive pointed out that his airline's problems would be solved with the addition of two passengers on every flight.

The converse is true now. Very serious problems would be created by the withdrawal of two passengers from every flight, and this could easily result from a moderate business depression. If this were to happen, the airlines would not only need substantial reserves which they can secure under present conditions, but also should have a rate structure which can be made the subject of promotional adjustments.

There are nine reasons why the airlines won't make too much money. There are many more, but these nine are enough. When you consider them there is only one conclusion that can be reached. The concern of the airlines and of the government agencies which have charge of them should not be whether the airlines are making, or will make, too much money, but whether they can conceivably, under all these circumstances, make enough.



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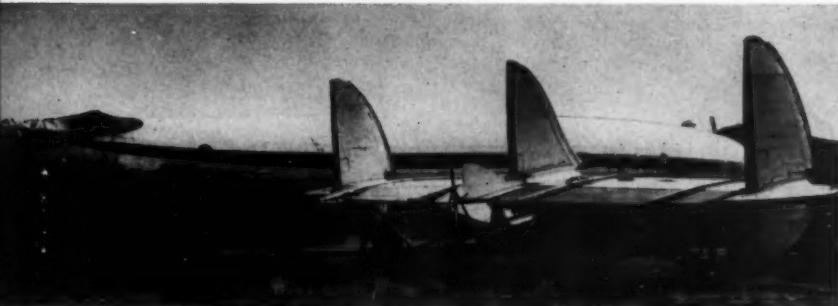


CAB2-BUST



DELIVERY of the wrecked Connie to Lockheed Aircraft Service was via land and water.

A Connie



DISASSEMBLED sections of the Constellation shown prior to the start of repair.



MECHANICS go to work on the stress plates during extensive repairs in this area.

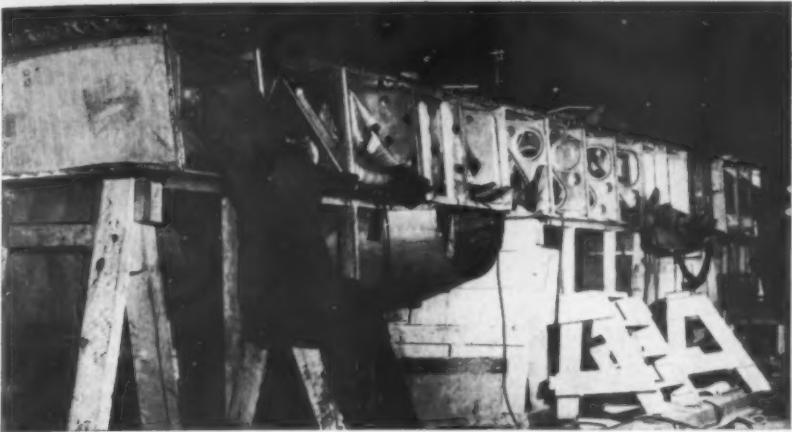
ONE of the most extensive repair jobs ever undertaken on a modern transport aircraft was completed recently when Lockheed Aircraft Service-International finished rebuilding what had once been BOAC Constellation No. 1980.

The airplane had run into a revetment during a landing overseas, washing out its landing gear and doing considerable damage to the flight engineer's station, the left inner wing, and surrounding areas. Los Angeles Air Service acquired the wreck from the insurance underwriters and awarded LAS a more than \$200,000 contract for the job of reconstruction.

First step was disassembling the aircraft into fuselage, inner and outer wings, tail planes, gear assemblies, and power eggs. Components were stored within the fuselage and Constellation No. 1980, now weighing some 52,000 pounds without its crating, was sent back to the United States by ship.

Upon its arrival in New York harbor, the Connie was lowered onto a barge, towed to an inlet near New York International Airport, and completed the last stage of its journey by truck to the Lockheed Aircraft Service-International base there.

Inspection showed that, in addition to fuselage damage, the left inner wing structure from Station 80 to Station 250 (i.e., from 80 inches to 250 inches out, measured from the fuselage centerline)



INTERIOR of the Connie wing get a going over by an inspector prior to start of repairs. Much of left wing was replaced.



REPAIRS in the nacelles and adjacent wing area were extensive.

Comes Back

had been completely washed out when the main gear retracted aft and upward. Damage extended as far out as Station 485.

A left-hand inner wing panel was purchased from Air France, and several fuselage sections were also bought from that line. The lower half fuselage section from Station 205 to Station 333 was replaced in this way.

The fuselage from Station 110 to 205 was completely rebuilt by LASI mechanics, using blueprints and the remaining structure as guides.

The work was done out in the open, in large part, or in a cluster of small buildings that were erected around No. 1980 for the purpose. The nose was completely covered, giving the impression that a constellation had unaccountably tried to nose its way into a small bungalow.

Complicating the job was the fact that the wing panel purchased from Air France had previously been damaged. This made it necessary to rebuild the entire secondary structure section of this wing, and modify the primary structure to the 96,000-pound gross weight configuration.

When completed, No. 1980 had zero hours throughout, all components having been thoroughly overhauled. The job, under the direction of A. R. Gagnon, general foreman, took an 11-man crew less than 29 weeks, or a total of over 40,000 man-hours. Flight tests have now been completed and the hybrid Connie has been delivered to Los Angeles Air Service.



LASI MECHANIC makes repairs to the instrument panel at the flight engineer's station. Below, the finished job.





ENGINEERS look over the five-inch cockpit scope on which the pilot obtains radar intelligence and controls which permit pilot to get optimum results from set.

New Radar Gives Collision Warning

A N AIRBORNE radar unit weighing 173 pounds and with a range of up to 200 miles has been put in production by Radio Corp. of America in its Los Angeles plant for the U. S. Navy and Air Force. Developed by RCA under Navy contract, the new unit is known as the AN/APS-42 and provides the following:

- Collision warning protection.
- Weather detection information.
- Navigation data, providing salient characteristics of the land over which the airplane is flying.

- Position location in relation to ground radar beacons.

The pilot gets his information from a five-inch radar scope or range-azimuth

indicator, which provides a pictorial display of radar signals and reflections transmitted and received by the radar antenna. The plane itself appears as a bright spot in the middle of the RAI. Around this spot is an altitude circle caused by reflections from the ground below the aircraft.

The black area at the bottom of the scope represents the rearward view of the radar blocked out by the fuselage in the nose-mounted installation; the area ahead of the plane appears white. Only when signals are reflected from terrain or heavy precipitation ahead or below does the outer area of the RAI give way to dark areas.

Using the pencil beam the pilot has up to 20 minutes between the time the shadow of a high peak shows on the outer edge of the scope and possible collision.

Versatile Unit

The pilot can select the most efficient utilization of radar output to suit his operational needs. Range selection permits him to use the scope to show an area of 5, 10, 30, 100, or 200 nautical miles and selection of a pencil beam or mapping-type scanning beam utilizes the unit's 50-kilowatt output to penetrate heavy storms or provide maximum-area coverage.

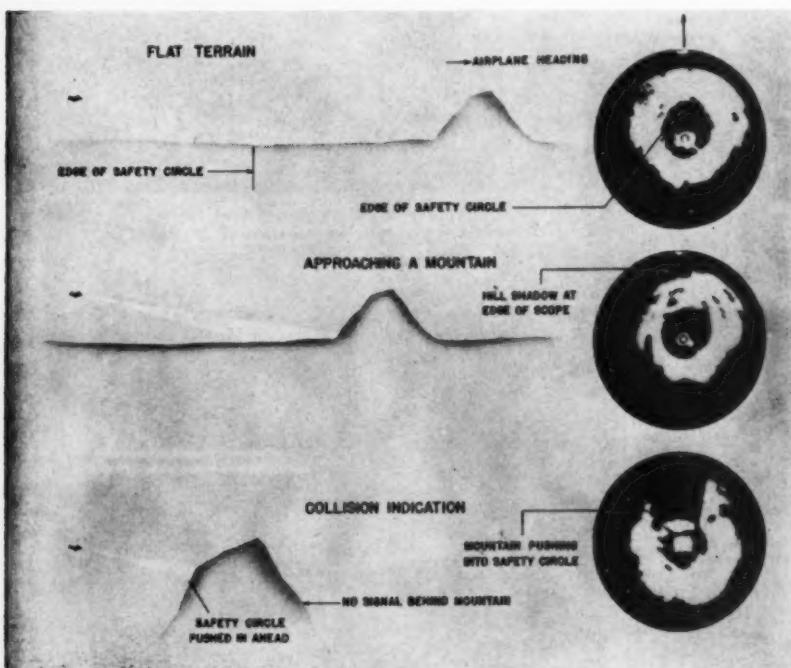
The pencil beam will show the pilot an area up to 200 miles ahead of his plane, or everything within a full circle of 400-mile diameter. The beam can be raised or lowered to measure the height of thunderheads and other clouds. The vertical fan position for navigation use shows the ground below up to 200 miles ahead of and to either side of the plane.

An X-band radar, the APS-42 operates on 9,375 megacycles. Four times as powerful as earlier airborne radar, the RCA unit has many new features including stabilized antenna to minimize the effect of aircraft attitude on the accuracy of the cockpit presentation.

ANDB to Study All-Weather 'Copter Aids

The problem of instrumentation and navigation aids for helicopters is to be studied by the Air Navigation Development Board in order to make possible all-weather operation, it was decided at a recent ANDB conference with military and civilian operators and helicopter manufacturers.

After pointing out specific problems facing operation of rotor-wing aircraft, the experts advised that the study should be in the hands of one agency. ANDB will probably contract actual development work to some part of the industry.



PILOT'S VIEW of cockpit radar scope with new RCA airborne radar unit under various flight conditions.

UP THERE WITH THE BIG NAMES...CHAPTER NUMBER 12



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SERVING INDUSTRY...WHICH SERVES MANKIND

How Much is Greater Flight Safety Worth?

For the last five years we've been standing still; progress may cost the industry half a billion.

THE UNITED STATES, Canada, and Great Britain together are currently spending over \$50 million each year for some 900 research projects on aviation safety, but it is not enough.

Although the number of air accidents has been cut in half during the last five years, the greater seating capacity of today's airliners has kept the number of fatalities per passenger-mile at about the same level. If the industry

is to have safer flying it will have to be prepared to buy it, and the price will be close to half a billion dollars. The alternative is a drastic tightening of government controls.

Such is the opinion of Harry F. Guggenheim, chairman of the Foundation Committee of the Cornell-Guggenheim Aviation Safety Center, as revealed recently upon the release of that organization's second annual progress report.

Money Needed

Lack of money has resulted in a failure to apply all the information that is already available, according to Mr. Guggenheim. "Our commercial airlines need to spend around half a billion dollars of additional private funds to serve the public efficiently and with greater safety. The federal government and municipalities must invest other hundreds of millions of dollars to provide adequate ground facilities for aviation and weather services," he declared.

"Neither the government nor the airlines have been willing to face the facts . . . Traffic has far outstripped airborne equipment and ground facilities. Until these have been adequately provided, far stricter government regulation must be imposed."

Accident rate of scheduled domestic airlines for 1951, as cited in the progress report of the Center, presented by Jerome Lederer, president of the Flight Safety Foundation and director of the Center, stood at 1.3 fatalities per 100 million passenger-miles, off somewhat from 1950's record of 1.1, and only on a par with the 1949 figure. Average over the past ten years has been 1.76.

A year ago the Center surveyed

the safety field and indicated many areas where little or no effort had been applied. Most of these gaps are now reported closed, and weaker areas have in many cases been strengthened.

List of projects in the progress report for 1951 was divided into sections dealing with The Man, including the crew and passengers; The Machine, including the aircraft, the powerplant, equipment, and the various systems, together with their effect on structure and operation; and The Medium, including the atmosphere, weather, airports, navigational and radio aids, and rescue and survival equipment.

THE MAN: The widely increased use of flight simulators by the military was applauded, but it was noted that these usually arrived too late to prevent accidents with the first models of any new aircraft received. It was suggested that such simulators be scheduled to arrive before first deliveries of aircraft. Arrangements should also be made to rent simulators to the airlines, it was felt.

• The cockpit could be made safer by increased "functionalization" of controls, it was noted, as contrasted with "standardization." In the former approach, the controls are located in the most efficient locations, as determined by studies of human capacity and reactions.

• Measurement of fatigue or alertness by the recording of brain waves, or by the determination of the threshold at which the eye "sees" continuous light from a flickering source, was under consideration at year's end.

• The effect of a combination of stresses on the human body was cited as an inadequately explored phase of the subject. If fatigue, "g" loads, and hypoxia (resulting from lack of oxygen at high altitudes) should be combined, the result might well be a collapse, even though the individual stresses were within "safe" limits.

THE MACHINE: Here mathematical calculations based upon the laws of probability are showing great promise in accident analysis, pilot performance studies, weather forecasting, and similar fields.

• Anti-collision devices are also drawing attention, especially high-intensity flashing lights. Use of CW and Doppler radar principles was also reported in connection with a warning

device under development by Cornell. A combination of airborne and ground-monitored radar continues to look like the best solution at present.

• Instrumented crash landings, scheduled for the NACA test program in 1952, promise to be highly valuable to the industry and all others interested in air safety.

• Seat strength studies, advanced greatly by the Crash Injury Research Project at Cornell Medical College, are a promising area of development. MATS is now adopting the non-reclining, rear-facing seats for its C-97 transports, and the Australian government has recently made it mandatory that all transports delivered in the future be equipped with rear-facing seats.

Fire Control

• Crash fire control has been advanced by the British authority on that subject, Mr. Glendenning, who has advocated suspending a large plastic sphere filled with fire suppressant over the crashed aircraft. CAA tests have shown that when the sphere is exploded over an engine nacelle, for example, it is successful in controlling the fire. More reasonable emergency exits and evacuation procedures have also been developed by CAA tests.

• Boundary-layer control, for better aircraft control at high and low speeds, and gust-alleviation devices, for smoother rides and a reduction in structural loads, have also been under test with good results. A gyro device for obtaining spiral stability seems measurably closer to completion as a result of the work of Professor Koppen of M. I. T.

• Fireproof materials have come in for their share of attention, with the discovery by Boeing that fire hazards are often built into electronic equipment in the form of inflammable plastics.

THE MEDIUM: Present uproar over close-in airports and preferential runways has highlighted the importance of cross-wind landing gears and positive electronic guidance.

• Continuous weather broadcasts are being tried out in the New York City area. Changed hourly, the tape-recorded reports are broadcast from 6:00 a. m. to 6:00 p. m. in the hope of reducing the jammed telephone traffic that plagues weather bureaus during spells of bad weather.

• Survival and rescue equipment of various types is being continually developed and improved, including 40 and 50-pound units which can be ejected from the aircraft upon ditching.



Guggenheim

Such is the opinion of Harry F. Guggenheim, chairman of the Foundation Committee of the Cornell-Guggenheim Aviation Safety Center, as revealed recently upon the release of that organization's second annual progress report.

Money Needed

Lack of money has resulted in a failure to apply all the information that is already available, according to Mr. Guggenheim. "Our commercial airlines need to spend around half a billion dollars of additional private funds to serve the public efficiently and with greater safety. The federal government and municipalities must invest other hundreds of millions of dollars to provide adequate ground facilities for aviation and weather services," he declared.

"Neither the government nor the airlines have been willing to face the facts . . . Traffic has far outstripped airborne equipment and ground facilities. Until these have been adequately provided, far stricter government regulation must be imposed."

Accident rate of scheduled domestic airlines for 1951, as cited in the progress report of the Center, presented by Jerome Lederer, president of the Flight Safety Foundation and director of the Center, stood at 1.3 fatalities per 100 million passenger-miles, off somewhat from 1950's record of 1.1, and only on a par with the 1949 figure. Average over the past ten years has been 1.76.

A year ago the Center surveyed

Airlines Attack No-Show Problem With New Procedures

NEW PROCEDURES which the U.S. airlines feel will greatly alleviate the "no-show" problem will be placed in effect on or about June 15.

Additional responsibilities will be placed on passengers, but airlines procedures will also be tightened up all along the line, particularly in the interline field. Those who have studied the problem feel that faulty procedures may account for as high as 70% of the no-show difficulties, with the passenger accounting for only 30%.

The new procedures are going to cost the airlines a considerable amount of money for additional communications facilities, personnel, training, and monitoring.

Passengers' responsibilities will include:

- **Originating passengers** must pick up their tickets at least six hours before flight time, or space may be cancelled. If reservation is made within the six hours, a reasonable time will be allowed.

- **Return-trip passengers**, stopover passengers, or those who made reservations from another city, must reconfirm space six hours before flight time, or be canceled.

New airline methods will include:

- **Communications** with other airlines are to be given preference, even at peak telephone periods, so that information on interline passengers can be recorded quickly.

- **Complete information** on cancellations, itinerary changes, etc., is to be relayed immediately to connecting carriers.

- **Receiving carriers** are to determine whether or not a connection will be made, a responsibility that has not been clearly defined in the past.

- **Local reservations personnel** at important connecting cities are to hold joint meetings every 90 days to discuss reservations problems and how they are handling them.

- **An Air Traffic Conference** staff will coordinate all interline reservations matters and spotcheck to see if carriers are complying with procedures.

- **Airlines are to obtain** more accurate information about their passengers, including phone contacts. This, plus the six-hour rules, will enable the lines to keep more accurate records of passengers and work waiting lists faster.

An ATC committee has been established to study cash penalties for no-shows, a system tried once and abandoned. Members are Roger Burkhardt and Vince Long, of American; T. S. Miles, C&S; M. F. Fare, Piedmont; Frank Van Gillwe, United; C. J. Cox and J. M. Slichter, Western.



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Sparks Set Off by EAL Flight Engineer Award

Union, riled by results, files suit to have award retracted; feels pay formula results in wage cuts.

AN ARBITRATION award setting up a formula for flight engineer pay patterned somewhat after the 1951 airline pilot contracts has touched off one of the liveliest airline labor disputes of the year.

The award covered the 139 members of the Eastern Air Lines chapter of the Flight Engineer International Association-AFL, and it resulted in the following repercussions:

- FEIA's Eastern Air Lines chapter filed suit in U. S. District Court in Miami to have the award "impeached."

- *The Flight Engineer*, FEIA's official journal, carried a front-page editorial in which it blasted the award as "a travesty of justice," "this infamous deed," "this flagrant miscarriage," and "a grievous wrong."

- Bernard Cushman, FEIA member who had withdrawn from the arbitration board prior to issuance of the

award, came out with a lengthy and detailed analysis of the award and its alleged shortcomings.

Historically, flight engineers have almost uniformly been paid on a straight monthly salary basis, and in the case of EAL this started at \$420 a month, with six months' automatic progression raises to a top rate of \$585 per month at the end of 3½ years.

FEIA had argued that this should be changed and its members paid on the basis of an incentive system of pay converting their single monthly salary basis to a formula patterned on the increments now contained in the new airline pilot agreements. It insisted however, that:

- The increments such as gross weight pay, hourly pay, and mileage pay, should be 50% of those paid the captains, with a total yield in the neighborhood of 60% of the captains' pay.

- The flight engineers should be paid a flat monthly guarantee beginning at \$450 per month and reaching \$700 per month in the sixth year.

What the award gave them, FEIA insisted, was something quite different and in effect provided a wage cut for most Eastern's flight engineers. Terms of the pay formula were as follows:

- Monthly base pay starting at \$430 in the first year, going to \$485 in the second, dropping back to \$235 in the third, and increasing in small increments to \$330 in the eighth year and after.

- Hourly flying pay of \$1.74 for each hour of day flying and \$2.61 for each hour of night flying during the third year of service and thereafter.

- Gross weight pay of ½¢ of each 1,000 pounds of maximum certified gross weight of the aircraft for each hour flown.

- Mileage pay of ½¢ per mile flown during each month, based on pegged speeds of 250 mph for Lockheed L-749 Constellations and 260 mph for L-1049 Super Constellations.

- Foreign and overseas pay of 45¢ per hour for each hour flown in such operation, in addition to other rates of compensation.

- Minimum monthly guarantee of \$485 per month during the third year of service and thereafter.

The award was made retroactive to November 1, 1951; and provided a formula for computing flight time and flight pay from that date through April 30, 1952.

While the two arbitration panel members who signed the award—Frank P. Douglass, neutral member and chairman, and Capt. F. A. Stone of Eastern Air Lines—seemed to feel that the award "maintains the historic differential in pay between flight engineers and captains," the FEIA disagreed most emphatically, claiming that the award would:

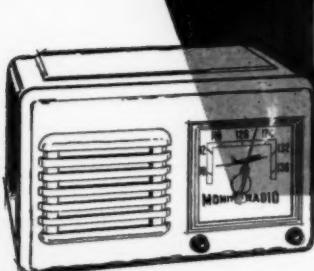
- Inequitably widen rather than narrow the gap between captain and flight engineer.

- Actually result in pay cuts for most EAL flight engineers.

- Provides a guarantee of only \$485 per month, which is \$100 per month less than the top-rated employee earned prior to the award and under the preceding contract.

It looked as though the courts might have to say the final word in the dispute.

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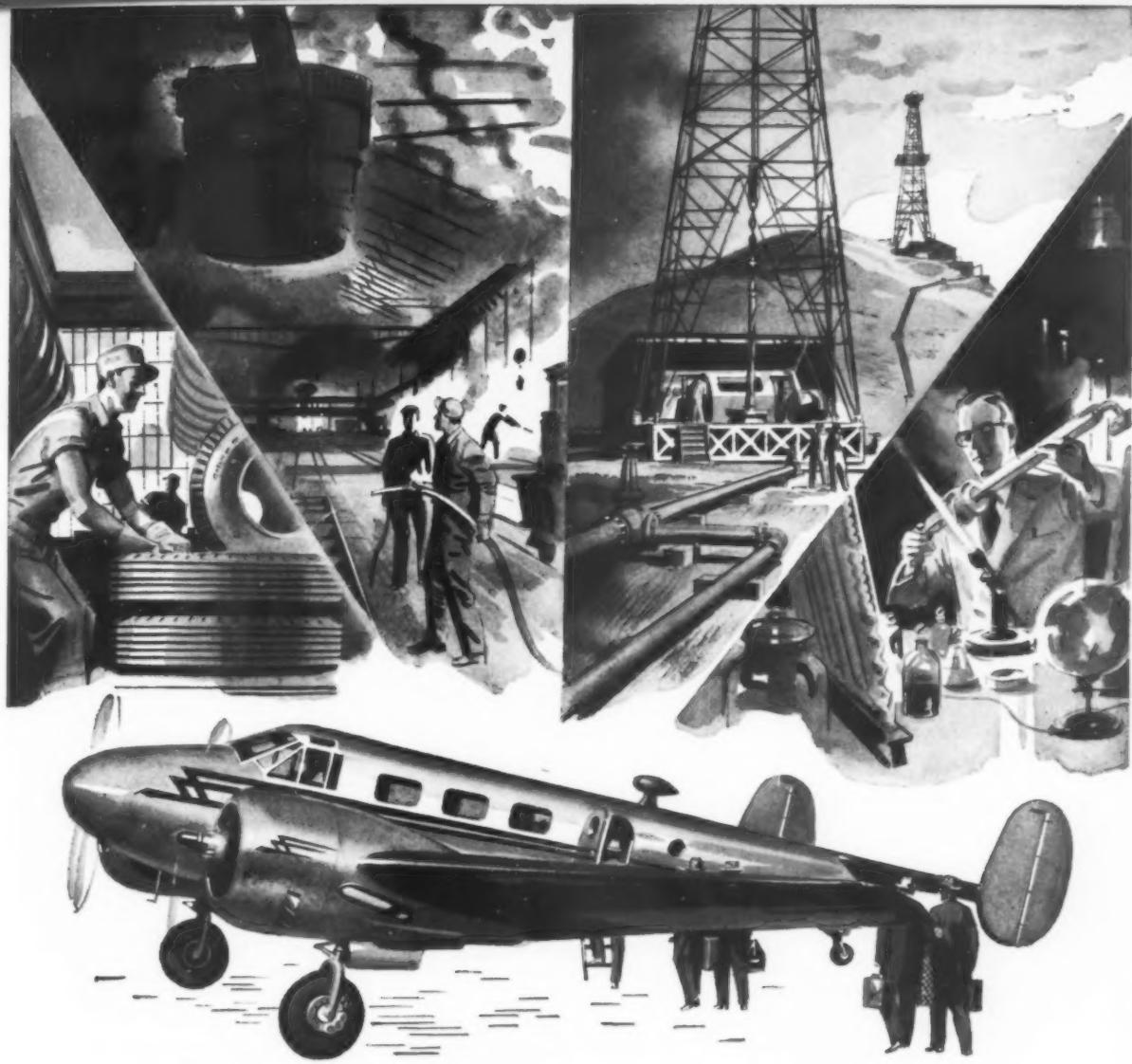
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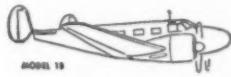


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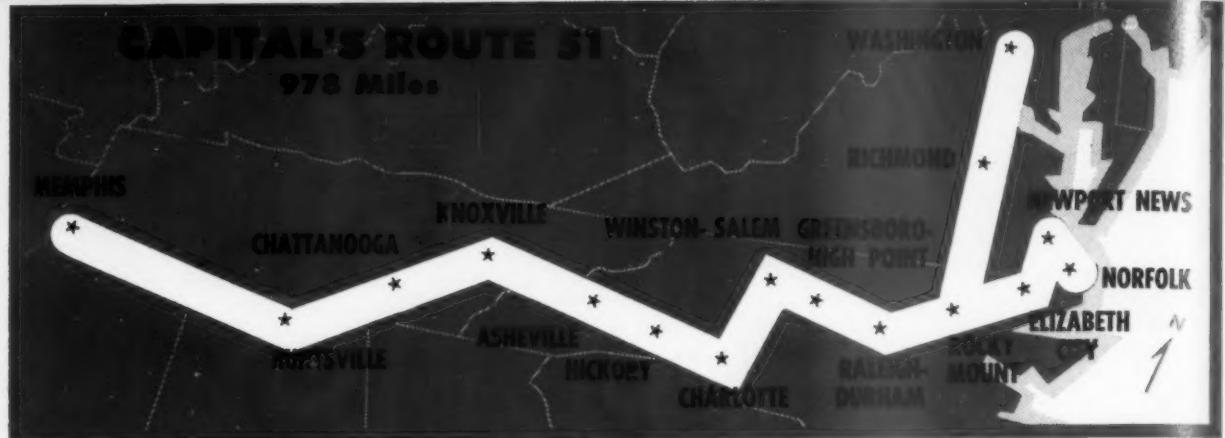


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The Big Controversy: Routes 51 and 55

Why have Capital's routes taken on such prominence; what will come of CAB probing, purchase orders?

By WILLIAM V. HENZEY

A FINANCIAL and economic tug o' war unparalleled in 20 years of aviation history has propelled Capital Airlines' so-called "southern routes" to a point of extreme prominence in current airline merger negotiations. At least five airlines are on the would-be buyers' end, CAB feels an investigation is necessary and is conducting one, and Capital, committed to merge with Northwest, is resisting all offers "at this time."

Officially, the routes are designated as Air Mail Routes 51 and 55. In many respects, they may represent the key to the future air map of this country. But when, how, and to whom the routes will be sold, if at all, hinges on the outcome of arm's length bargaining of the parties and CAB's investigation, known generally as the New England-Southern States Merger Investigation.

Older Route

Route 51, the older but less productive of the two, was awarded to Capital in September, 1940. Present terminals, Memphis and Washington, are 978 miles apart, representing the 4th longest segment on the entire Capital system. From Memphis to Norfolk, the other eastern terminal, the distance is 940 miles—fifth on the system.

Last year, Route 51 showed a net operating loss to Capital of \$309,007, based on a full allocation of system overhead expense. In 1950, the loss was \$315,093. Total operating revenues over the two-year span increased from \$1,119,629 in 1950 to \$1,360,393 last year,

according to Capital's exhibits in the New England-Southern States Case. This compares with a system-wide operating profit of \$3,709,145 from total revenues of \$38,702,493 in 1951.

Route 55 was certificated to Capital in January, 1941. The New York-New Orleans segment is 1,354 miles long, tops on the whole system in terms of point-to-point distance. The other leg, New York-Atlanta is sixth with 923 miles.

The route is subject to several restrictions. One prevents Capital from serving Atlanta on flights serving New Orleans, Mobile, and Birmingham. Another requires that all flights serving New York or Newark, on the one hand, and Pittsburgh, on the other, shall originate at Knoxville or Asheville or points beyond.

In 1951, again assuming a full allo-

cation of system overhead expense, Route 55, according to Capital's exhibits, produced a net operating income of \$1,095,389, representing a sharp increase over the 1950 net of \$231,900.

Stimulated by non-stop Lockheed Constellation flights between New York and Atlanta, the route produced total operating revenues of \$6,338,720 in 1951, as compared to \$4,317,343 in 1950.

Loss to Profit

Collectively, the two southern routes showed:

- \$83,193 loss in 1950;
- \$786,382 profit last year.

This rebound was made on the strength of Route 55 gains.

From a traffic standpoint, using revenue passenger-miles as a yardstick, the two routes accounted for 21.1% of the system total in 1951, as contrasted to 12.7% five years ago, reflecting a steady upward trend.

But here again Route 55 was re-



sponsible for the gain, rising from 8.5% of the system total in 1947 to 17.5% last year. Route 51, despite a numerical gain in revenue passenger-miles, showed a percentage drop over the same span from 4.22% to 3.59%.

Why the routes have achieved such prominence today can probably be traced through negotiations which began in early 1951 when the now-boiling merger pot was in the simmering stages. Delta Air Lines, chief bidder for the routes, then had a merger proposal with Northeast Airlines, which needed a connecting route link. Since Capital and Northwest had had merger talks at that time, the possible transfer of CAP's southern routes to the Delta-NEA combine, in the event of culmination of a Capital-Northwest deal, was also discussed.

Others File

On September 14, 1951, prior to signing of the present Capital-Northwest deal, CAB, on its own initiative, instituted the New England-Southern States Case to explore possibilities of transferring all or portions of Routes 51 and 55 to Delta, Northeast and/or Colonial.

On February 6, 1952, Capital and Northwest filed their merger plan with CAB. Subsequently, further discussions between officials of those lines and Delta and Northeast were held on the Routes 51 and 55 transfer or sale issue. Delta, on March 6, submitted a written offer to Capital which totaled \$6,006,075, of which approximately \$2.25 million reportedly was for the routes and about \$3.7 million represented, as Capital states it, "Delta's approximation of 50% of Capital's net book value."

Not Interested

Then Chicago and Southern, which recently agreed to merge with Delta, petitioned CAB to be considered as a possible transferee for the controversial routes with CAB to determine a "fair and reasonable" price. National then asked to be considered, as did Piedmont Aviation, a local service line which felt it could use various points or segments of the Capital routes if they were to be parceled out.

Capital's answer to the proposals, given by its president J. H. Carmichael, was: "For many good and sound reasons Capital is not interested at the present time in negotiating for the disposition of any of its routes or parts of routes. Capital is devoting its undivided attention to the consummation of its merger agreement with Northwest, confident that the expedition of this merger is of paramount importance not only to Capital and Northwest, but to the air-

line industry as a whole."

But there are some arguments that opposition to the Capital-Northwest plan will be forthcoming on the question of integration of Routes 51 and 55 with the remainder of the two lines' routes. Capital operates four other routes, designated as 14, 34, 41 and 46. CAB Chairman Donald W. Nyrop, in a recent dissenting opinion, indicated the Capital-Northwest merger may be delayed rather than expedited if the issue of transferring 51 and 55 to another carrier is not simultaneously tried with the merger.

Long Case

Nyrop's reasoning is that the Board, under its statutory authority, may determine the Capital-Northwest deal should

be approved only on the condition Routes 51 and 55 do not form part of the merged system. In such event, the Board Chairman said, the merger might have to be held up until a transferee is agreed on.

This is where the Board's New England-Southern States Case, handled by Examiner Edward T. Stodola, comes in. Case is primarily concerned with determining who, if anyone, should get the routes. But it could be a long case with complex issues and Delta, C&S, and Northeast feel the quickest way to effect their over-all combination is through voluntary negotiations with Capital. They still want to buy, Capital still balks at selling, and CAB can be counted on to continue its probe.

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Bonanza: Small Line with Big Growth Record

With only 664 operable route miles, carrier has done well, but needs new mileage to expand.

By DANIEL S. WENTZ II

BONANZA Air Lines, third smallest local carrier in the country with only 664 miles of operable routes, has one of the best growth records of any local-service airline. Typifying the airline's operation and growth:

- In January of this year Bonanza stood fourth among the 17 local lines, with a 38.82% load factor. By April the load factor had been pushed to over 50% for the first time.

- An outstanding example of a true feeder function, Bonanza sold almost \$10,000 worth of tickets on four connecting airlines in December, 1951, and lifted another \$9,395 in tickets of other carriers.

- First scheduled coach operation by a local-service airline was started by Bonanza on May 5 between Las Vegas and Phoenix.

- Even on its limited present-day routes Bonanza gets 4:28 hours utilization daily. This compares with an industry average of 6:24 minutes.

The company has done well with its small mileage since it began operating on December 19, 1949. But it needs new mileage to expand, to spread its costs, and to increase its aircraft utilization. CAB recognized this need with this comment: "Bonanza is now severely hampered by lack of sufficient traffic and revenue value over which to spread its overhead costs, and it cannot obtain maximum utilization of its aircraft."

Despite this recognition of Bonanza's needs, CAB awarded the routes of Arizona Airways, sought by Bonanza, to Frontier Airlines. The 660-mile

Phoenix-Los Angeles extension awarded by CAB is still tied up in a Circuit Court appeal case in San Francisco and Bonanza cannot fly it as yet.

The real index of Bonanza's progress shows up in its 1951 monthly load factors compared with a 12-month moving average load factor. (all data adjusted to 21-seat DC-3 basis):

System Load Factor

January	32.54
February	40.50
March	39.39
April	39.41
May	37.99

June	41.40
July	36.95
August	40.46
September	42.53
October	43.62
November	41.37
December	36.10

12 Month Moving Average Load Factor

January	25.26
February	26.83
March	28.43
April	29.80
May	32.25
June	32.32
July	33.38
August	34.55
September	36.02
October	37.42
November	38.62
December	39.34

Two facts stand out from these figures:

- Bonanza has made steady progress in developing traffic on its existing route;

- There is no discernible seasonal traffic fluctuation.

Bonanza last year ranked 14th among the 17 local lines in number of revenue passengers carried: 30,216; 13th in revenue passenger miles: 7,716,000; and 16th in mail ton miles: 6,483.

It ranked 16th in total miles flown, and 14th in total operating revenues and passenger revenues during 1951.

Bonanza's present 664-mile route contains two distinct segments. There isn't a single really large traffic point on the system. The northern leg—Reno, Carson City/Minden, Hawthorne, Tonopah, Death Valley, Calif. (no adequate airport) and Las Vegas—links Nevada's two major cities. But there is no real community of interest between them, and traffic has been diffi-



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cult to develop. The relationship is clearly shown by a review of operating load factors. During the ten month period ending January, 1952, load factors (adjusted to 21-passenger DC-3's) ranged from 21.19 to 32.72 on this route. By contrast the load factors on the southern leg from Las Vegas to Phoenix via Boulder City (served through Las Vegas, due to inadequate airport), Kingman and Prescott tells a different story. For this same period load factors ranged from 50.19 to 58.95 on this leg.

This basic imbalance is a vital factor explaining Bonanza's need for more mileage. And it makes the carrier's growth record even more impressive.

The Phoenix-Los Angeles extension of 660 miles would nearly double Bonanza's system mileage. Projected stops are Blythe, Calif., Ajo and Yuma, Ariz., and El Centro, San Diego, Oceanside, and Santa Ana/Laguna Beach, Calif., in that order. Long Beach is a co-terminal with Los Angeles.

Much of Bonanza's traffic goes to connecting carriers—American, TWA, United, and Western—through links at Reno, Phoenix, and Las Vegas.

Interline Business

In December, 1951, for example, Bonanza sold \$2,469 worth of business for American; \$2,030 for TWA; \$2,761 for United; and \$1,900 for Western. In the same month, Bonanza station lifted tickets sold by other carriers amounting to \$9,395 in revenue for Bonanza.

High participation in connecting traffic has marked the company's operations since it began certificated service.

On May 5, Bonanza began the first coach operation for a local airline, with a night round trip between Las Vegas and Phoenix at a one-way fare of \$12.75, or 5c per mile against the regular 0.675c per mile fare of \$17.40. The carrier hopes coach traffic generated on its strong leg will help offset the light-traffic Las Vegas-Reno operation.

Bonanza's economic foundation rests on the private resources of its president Edmund Converse and vice president Wesley J. Durston. Converse is a lawyer with a wide financial background who handles day-to-day administration of the company. Durston's long-standing interest in aviation and previous activities in the heavy machinery and equipment business are valuable to the carrier. Secretary-treasurer Florence J. Murphy, only woman secretary-treasurer of any airline, works on administrative details, handles treasury operations, and takes care of labor and personnel relations. Mike Cole, who previously held positions with South-

Bonanza's Financial Picture

	December 19-31 1949	1950	1951
Passenger revenues	\$7,562	\$262,492	\$400,552
Mail revenues	18,407	516,572	549,397
Express revenues	45	5,686	8,782
Total operating revenues ...	26,443	796,007	976,655
Total operating expenses ..	29,359	852,625	1,051,977
Net operating loss	-2,916	-56,618	-75,322
Passenger revenues as per cent of mail revenues .	41%	50%	72%
Mail revenues per cent of total operating revenues	69%	64%	58%

west Airways and Capital Airlines, heads traffic and sales as vice president. Vice president-operations is Myron Reynolds, formerly with Frontier, an active pilot who occasionally flies a scheduled trip. Manager of maintenance is Ralph Allen, former TWA employee.

During the third quarter of 1951, Bonanza's fleet of four DC-3's experienced direct operating costs per revenue-mile of 45.46c compared with an average for other DC-3 local lines of 43.02c. Total operating expenses were 103.70c per mile, against an industry average of 89.86c per mile.

The carrier's flight costs are affected by the mountainous terrain over which it operates and by detours from the shortest direct flight path made necessary by numerous restricted areas—Air Force bombing and gunnery ranges and the AEC Testing Ground at Frenchman Flat, among others. Mail pay is figured on direct point-to-point mileage.

Bonanza's fleet of four DC-3's has all been converted in Bonanza's shops to 28-seat configurations worked out by Burns Aero Seat Co. at a cost of approximately \$13,000 per plane. Power plants are Pratt & Whitney R 1830-92's, of which Bonanza owns 20.

Southwest Airways performs Bonanza's engine overhauls under contract; instrument overhauls are farmed out to Sun Valley Air Service, Phoenix, Ariz. All planes are equipped with dual ADF but do not carry ILS gear. The company is considering ILS but does not feel the equipment cost of about \$25,000 per plane could be justified, since Los Angeles is the only certificated route point with an ILS installation.

Weather in the area is generally so good that ILS is not required in most locations, and it is unlikely that Bonanza will obtain it. Likewise the estimated cost of \$80,000 per aircraft for omnirange equipment seems to be well beyond the sources of a relatively

small airline.

Bonanza does its own airframe overhauls and inspections. CAA has recently increased the time requirement for No. 1 inspections from 50 to 60 hours; No. 2 inspections from 150 to 175 hours; and No. 3's from 250 to 300.

Philip Hollar to Head Transportation Council

At the first formal meeting of the Transportation Council of the Department of Commerce, Philip A. Hollar, former Deputy Under Secretary of Commerce for Transportation, was elected chairman. Milton W. Arnold, vice president-operations and engineering of the Air Transport Association, was named to the executive committee.

The purpose of the newly formed council is to serve as a clearing house for discussing transportation problems with the government. The next meeting will be held in September, with time and place yet to be determined.

World Navigation Facilities Improved

Air navigation facilities and service throughout the world have been improved and many deficiencies eliminated in the past year largely as a result of the efforts of the ICAO Air Navigation Commission and Council, Dr. Edward Warner, president of the Council, has announced.

As a result of the Council's action, taken after investigation showed some 50 air navigation services and facilities inadequate or lacking, new facilities are already available in Sudan, Belgian Congo, Brazil, Egypt, India, Italy, Pakistan, Syria, and the United Kingdom. Other deficiencies will be eliminated within a short time, according to ICAO report.

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Extra Section

By William D. Perreault

IN AN ENVELOPE marked the *New York Enquirer* we received a copy of "AIR-LINES," a column written by Jack Barnes. It was forwarded because it contained a reference to our special 172-page Air Transport Progress Issue: "AMERICAN AVIATION, April 28 issue, trying to sell the public on how well airline engines are being maintained. I flew 32 combat missions overseas and never had any engine failure except when an engine was shot out. Engine failure is due to negligence and should never occur." We figure Barnes' missions give him about 250 flight hours. Last year the scheduled airlines logged about one-half billion plane-miles. Maybe that's the difference.

For laughs, here are some more of Mr. Barnes' comments: "North American Aviation may pull a fast one on all their competitors by coming out with an atomic engine airliner." Seems as though this will also be a fast one on the Atomic Energy Commission, Department of Defense, and a few others.

And on reducing accidents: "Recently I went over the list of violations that various airlines were discredited with. I was amazed to learn that most companies run their yearly violations up into the hundreds. Why? It is my opinion that we start from scratch. Ground one-half of all airliners for one week, the other half the following. From there on, set a three violation limit on an airline, no matter how big, no matter how small. If the airline oversteps, withdraw their operating certificate. This will decrease the number of accidents and renew the public's faith in air transportation."

A conference on ignition and engine analyzers will be sponsored by the Scintilla Magneto Division of Bendix Aviation Corp. at Lake Oquaga, near the Scintilla plant at Sidney, New York, on June 24-26. Attending will be representatives of the domestic and foreign airlines, military services, engine and ignition equipment manufacturers, and others with legitimate interests in the operation, maintenance, and application of electronic analyzers. This is a new and challenging field with much to be gained by sharing experience. We plan to be on hand.

The area of "sizeable irritation" caused by aircraft noise will be sharply increased by the advent of jet transports, according to papers presented recently before the Acoustical Society of America, with noise levels rising as much as 100 times in certain areas. MIT's Dr. Leo Beranek said the DC-3 path of "sizeable irritation" is a strip two miles wide and eight miles long, but this will increase to four miles by 24 with turbojet transports and four miles by 32 with four-engine turboprop transports.

We've always considered that the passenger loading ramp has a remarkable record of service. It's abused, beaten, and a constant source of maintenance troubles but relatively few employee injuries are ever credited to these ramps and even fewer passenger injuries. It came as a shock to read reports that nine persons were injured, two seriously, when a loading ramp collapsed at Idlewild Airport. Thirty-five persons were on the ramp posing for photos at the time the ramp collapsed. Use of the loading ramp as a photographer's prop is a common practice and might bear watching.

From Chicago & Southern come some interesting economic figures on a recent 10,000 hour overhaul on one of their Douglas DC-3's. The overhaul, which kept the airplane out of service for 18 days, cost \$19,195.24, of which \$14,740 was for labor and \$4,455.24 for material. Work on various accessories removed during overhaul boosted the total cost by \$3,540, to a total of \$22,735.24.



AERIAL VIEW of Rheem Manufacturing Co.'s aircraft division \$6,000,000 plant at Downey, Calif.

Sub-contracts Created Rheem Aircraft

Not in existence 18 months ago, new division of Rheem Manufacturing now has a \$60,000,000 backlog.

IN A NEW \$6,000,000 plant at Downey, Calif., the aircraft division of Rheem Manufacturing Co. is moving toward peak production, which it will reach in June. Less than 18 months ago the division didn't exist.



Cooper

How the science—or art, if you prefer—of subcontracting has progressed within the industry since World War II.

Its establishment, under the direction of Laurence H. Cooper, represents one of the more spectacular aircraft production accomplishments of the current defense program, and is a graphic example of

Rheem is making nose sections for Lockheed's T-33A, F-94C, and P2V, and for Northrop's F-89D. It is making ducts and seats for the T-33A's and F-94C's and is starting on a T-33 scoop project. It is also making body parts of a new guided missile for Douglas.

Billing is now running well over \$1,000,000 a month and will reach \$3,000,000 in July. Backlog currently exceeds \$60,000,000.

The Rheem aircraft division was started on January 15, 1951, after Richard S. Rheem, president, decided the company should add a plant specially slanted toward a stepped-up production program in aircraft.

He engaged Cooper to organize and manage the new division. Cooper had a wide background in aviation, including production experience as a divi-

sion manager for Consolidated Vultee at Elizabeth City, N. J., Miami, and New Orleans, and as executive vice president of Pacific Airmotive Corp. By February 23, or in less than 40 days, Rheem and Cooper had picked out and purchased a 50-acre site at Downey, had drawn up plans for a 320,000-square foot plant, and had broken ground for it.

Building A, 300 x 700 feet, together with a separate drop hammer building, was completed on November 1, and Building B, the 180 x 500 foot guided missile plant, was completed on March 1 of this year. An addition to the missile plant is under construction.

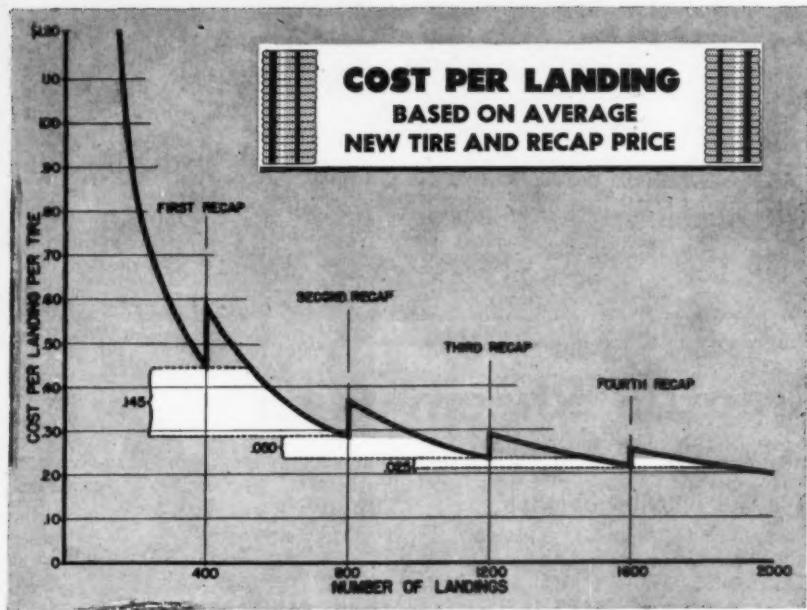
1,600 Employees

Total investment in the Rheem plant so far is approximately \$6,270,000, of which \$2,290,000 represents government-furnished equipment. Tooling includes \$800,000 in Rheem purchases. The plant's tooling was completed in record time by sending out four teams of tooling experts and buyers on a nationwide search for scarce machine tools needed to equip two divisions.

Rheem now has 1,600 employees on the payroll and has set the peak at 3,000. Cooper's staff in the new Rheem division includes: W. R. Miller, formerly with Convair, chief industrial engineer; W. T. Gibbs, formerly with Convair, chief plant engineer; W. S. Grant, formerly with the parent company, contract administrator; G. B. Huestis, also with Rheem, chief accountant; C. L. Millman, formerly with Day and Night Division of Affiliated Gas Equipment, director of industrial relations; A. J. Casebeer, formerly with Kaiser, chief inspector; R. J. Hartmayer, formerly with Convair, chief of material; F. J. Savaglio, formerly with Convair, chief tool engineer; C. W. Felker, formerly with Convair, superintendent of Factory A; M. C. Keller, formerly with Pacific Airmotive, superintendent of Factory B; V. L. Floore, formerly with Convair, chief of production services.



DISCUSSING FUTURE plans are Director Laurence H. Cooper (far left) with his staff members (left to right) W. R. Miller, chief industrial engineer; W. T. Gibbs, chief plant engineer and A. J. Casebeer, chief inspector.



Retreads, Longer Use Can Cut Tire Costs

Try three retreads, wait 10% longer before removing, U. S. Rubber advises industry.

By KEITH SAUNDERS

After taking a look at last year's tire bill of well over \$2,000,000, the nation's airlines have been giving more attention than ever before to this part of the operating cost budget.

More specifically, they have turned the problem of decreasing the cost-per-landing factor as much as is consistent with safety, and in this connection they are reviewing the suggestions advanced at the last Aircraft Tire & Tube Conference held at the U. S. Rubber Company's Detroit plant. There it was suggested that such costs might be decreased by:



Torossian

- Increasing the number of recaps applied to the original carcass while maintaining the average number of landings per tread;

- Increasing the average number of landings per tread by decreasing premature removals.

E. K. Torossian, aircraft sales engineer for the rubber company, disclosed at the conference a preliminary analysis of the effect of recapping on cost per landing, using a hypothetical tire size which represents an average tire, in respect to both cost and service, in current airline operation.

Assuming the price of the new tire to be \$175, and the cost per recap to be \$58, Torossian displayed a chart showing the cost-per-landing trend as successive recaps are applied. The chart showed that up to the time when the original tread was worn off, the cost per landing was approximately 44c. At

the end of the first recap, the cost was cut by 14.5c to approximately 29.5c per landing. The cost had been decreased another 5c per landing by the time the second recap wore off, and the curve was beginning to level off. The third recapping cut the cost-per-landing by another 2.5c, bringing the cost at the end of three recaps to 22c per landing for a hypothetical tire.

In regard to the second point, the tire engineer offered the assumption that it is possible to increase the average number of landings by 10%, that is, from 400 to 440, by proper inspection procedures that would decrease premature removals. In this case, he pointed out, the cost at the end of the second recap will be approximately the same as was previously established for the third recap. At the same time maintenance costs are cut by reducing the number of mounting and dismounting operations.

Eastern Experimented

Current practice of most carriers is to recap just twice. Some airlines, however, have been going to third recaps for some time, both with nylon and with rayon tire carcasses, and have experienced no trouble whatever with the retreaded tires.

Eastern Air Lines, for example, last year started testing a third retread on the main and nose-gear tires of its DC-4's and reported service comparable to that of an original, first, or second tread. It subsequently extended this test to its Lockheed Constellation and Douglas DC-3 aircraft and has reported no trouble to date.

Program Suggested

Airlines wishing to make their own tests are advised that:

- A number of tires should be followed through their original tread and first and second recaps, at which point an average number of landings and a cost-per-landing figure can be established.

- The number of landings obtained from the third recaps should then be noted and an actual average cost-per-landing comparison made between second and third recaps.

As for increasing the average number of landings per tread, this can be accomplished, the airlines were told, by preventive maintenance and by concentrating on the condition found to be responsible for the majority of premature removals. In this connection, the Rubber Manufacturers Association has prepared an illustrated service bulletin on airplane tires and tubes covering such matters as inflation, tire loads, tire inspection, inspection of wheels (both with tire mounted and dismounted), wheel line-up, taxiing, repairing and retreading, condition of landing surface, and storage of tires and tubes.

Savings in Tire Cost Through Multiple Retreads

Size	Fabric	New Tire Cost	Recap Cost	Avg. No. Ldg.	Cost/Ldg. 2nd Recap	Avg. No. Ldg. + 10%	Cost/Ldg. 3rd Recap	Savings Cost/- Ldg.	Savings Per Aircraft Per 1000 Ldg.
34 x 9.9/12	Nylon	80.64	40.63	300	.719	330	.614	.105	105.00
17.00-16/10	Nylon	136.33	56.50	600	.277	660	.232	.045	45.00
15.50-20/14	Nylon	182.13	61.99	350	1.166	385	.956	.210	210.00
15.50-20/16	Nylon	200.18	61.99	300	1.440	330	1.170	.270	270.00
17.00-20/16	Nylon	220.15	63.59	300	1.543	330	1.245	.298	298.00

1951 Federal Aid Cut Hits All Airport Classes

FEDERAL AID to airports for 1951 was \$6,478,026 less than 1950's grant of \$37,764,208, leaving the states 17% less money to work with and forcing a 24% cut in the number of airports benefiting. Only 334 airports could be cared for in 1951, compared to the 439 in 1950. The bulk of the total \$31,286,182 appropriation, however, was allotted again to the terminal-type airports.

Forty-three of the 47 states in line for funds shared \$25,293,154, or 81% of the total aid program, to construct or improve the Class 4 or larger airports. The funds took care of 157 airports of this type. These figures, represents a 12% drop from 1950, when 178 airports were serviced in 45 out of 48 states, with 80% of the 1950 funds.

Hardest Hit

Class I fields were the hardest hit by the appropriation cut. Only 16 states were able to improve 38 airports, with 11.5% of the fund, or \$359,416, set aside for this purpose. This represents a 62% reduction in the number of airports receiving help, 99 fields having benefited in the previous year. Nebraska spent the most on the small fields, budgeting \$69,360 out of its \$303,193 for six out of 17 fields included in its share.

Class II's fared somewhat better, but there was still an appreciable 20% drop in the number of fields receiving attention. Twenty-six states divided \$1,692,837 or 16.5% of the total funds to service 55 airports; 69 of the medium-sized fields had been benefited in 1950.

Class III airports were the least affected, suffering only a 10% decrease. Of the total grant, 25% went to 38 states, giving them \$3,940,675 to work with for construction or improvement of 84 airports, nine less than in 1950.

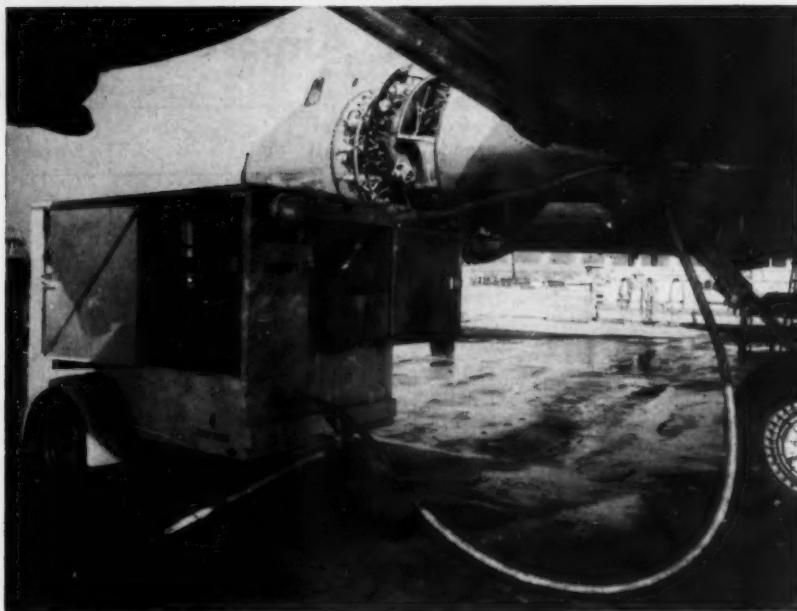
California and Texas again received the largest share of the Federal appropriation, though considerably less than in 1950. California was allowed \$2,994,931 for work on 16 airports, 10 of which are in the terminal class. In 1950, the state was given \$4,085,757 for 39 airports, 21 of which were Class 4 or better. Texas collected \$2,647,896 in 1951 for 18 airports, 12 of which were in the large category, compared to the \$3,537,007 granted in 1950 for 17 airports, 12 of which were in the Class 4 division.

Delaware was at the bottom of the ladder in 1951, having received \$15,300 for use on one Class III airport, compared to the \$41,200 allowed the year previous, a figure which at that time was second lowest.

1951 Federal-State Airport Grants*

State	Federal Funds	No. of Airports	Airport Class			
			1	2	3	4 and Larger
Alabama	\$ 218,775	9	2	1	1	5
Arizona	602,778	5	..	..	..	5
Arkansas	277,315	5	..	2	1	2
California	2,994,931	16	2	..	4	10
Colorado	910,346	3	..	1	..	2
Connecticut	22,000	1	..	..	1	..
Delaware	15,300	1	..	..	1	..
Florida	1,783,329	8	..	..	1	7
Georgia	1,273,766	8	..	..	1	7
Idaho	198,680	11	3	5	1	2
Illinois	1,264,000	13	..	2	3	8
Indiana	804,188	6	..	..	2	4
Iowa	575,344	7	..	..	3	4
Kansas	465,355	11	2	1	3	5
Kentucky	321,300	7	..	2	3	2
Louisiana	788,173	7	1	..	2	4
Maine	203,364	5	..	1	2	2
Maryland	239,767	3	..	..	2	1
Massachusetts	1,084,660	5	..	..	1	4
Michigan	1,230,514	12	1	..	3	8
Minnesota	765,350	9	2	1	4	2
Mississippi	199,195	10	2	2	4	2
Missouri	1,207,750	6	..	1	2	3
Montana	44,676	8	4	2	..	2
Nebraska	303,193	17	6	5	5	1
Nevada	20,325	1	..	..	..	1
New Hampshire	45,362	3	..	..	3	..
New Jersey	1,510,000	2	..	1	..	1
New Mexico	280,784	4	..	1	2	1
New York	1,803,050	8	..	..	2	6
North Carolina	429,066	7	..	1	1	5
North Dakota	178,400	15	4	4	1	6
Ohio	1,214,419	11	..	3	3	5
Oklahoma	365,011	9	..	1	6	2
Oregon	339,378	5	..	..	3	2
Pennsylvania	766,958	7	..	3	2	2
Rhode Island	500,000	1	..	..	..	1
South Carolina	37,500	1	..	..	..	1
South Dakota	57,491	5	1	..	1	3
Tennessee	446,312	7	2	2	..	3
Texas	2,647,896	18	1	3	2	12
Utah	283,558	5	..	..	2	3
Virginia	155,500	4	..	..	1	3
Washington	599,672	7	1	1	2	3
West Virginia	297,000	2	..	2	..	..
Wisconsin	1,323,050	12	4	4	2	2
Wyoming	191,401	7	..	3	1	3
	\$31,286,182	334	38	55	84	157

* Does not include grants in Alaska, Hawaii, Puerto Rico, and Virgin Islands.



CEE-BEE DESEALING unit hooked up to strip a C-54 tank. The desalant is pumped through the long flexible hose into a manifold system which is placed within the aircraft tank. The short hose going back into the top of the unit is the return line through which the material drains through a filter system back into the unit.

Cee-Bee Unit Speeds Tank Desealing

New recirculating system does 97% of the job and six-tank plane can be desealed in just five days.

ONE of the more complicated—and onerous—tasks in aircraft maintenance, removing the sealants from integral fuel cells, is being simplified by a mechanically operated circulating system developed by the Cee-Bee Chemical Co., Los Angeles manufacturer of industrial cleaning compounds.

In the last two desealing jobs on C-47's at Long Beach, Douglas Aircraft Co. accomplished the tank stripping in less than 500 man-hours by making use of a Cee-Bee portable unit. This compares with more than 1,800 hours by former methods.

Fill-and-Drain Method

Cee-Bee in the last few years has been putting major emphasis on its aviation market. It has been attacking the industry's cleaning problems primarily from the cost standpoint and it has been achieving encouraging success on more than one front.

A recent notable example is United Air Lines' use of a Cee-Bee brighter, CB R-66, at its San Francisco maintenance base. UAL is now polishing its DC-6 equipment in 20 to 24 man-hours as compared to 60 to 65 man-hours by the old method of hand polishing.

Tank stripping can be an expensive process not only because it eats up man-hours, but also because it ties up airplanes on the ground.

Using the conventional fill-and-drain method, it usually takes five days for the actual desealing of a six-tank airplane, after which two or three days are required for the follow-up hand cleaning. Fill-and-drain also involves the use of 3,000 gallons of material to fill all the tanks.

By working a Cee-Bee Recirculating Spray Desealing System, as it is called, on two shifts, a six-tank plane can be desealed to the point of mechanical repair within five days total elapsed time. By adding a third shift, the airplane's time on the ground can be cut to four days. Pacific Airmotive Corp. at its overhaul base at Chino, Calif., speeds up the process by operating two machines at once, completing the stripping of a MATS' C-54 up to the point of repair in two days time.

Moreover, only a total of 450 gallons of desealing material is required using one of Cee-Bee's units and actual consumption is only about 220 gallons, the other 230 gallons being reusable.

Basically, the Cee-Bee system is a mobile unit containing a reservoir of stripper and equipped with pump, motors, manifold system, and related equipment to provide a flow of the stripper at a rate of 150 gallons a minute.

Spray heads are attached to the manifold system which goes inside a cell to be stripped. These spray heads are so designed that they can be adjusted for various types of tanks and thus leave no blind spots. The stripper is sprayed into the cell under pressure of 45 to 60 psi. The unit contains a filter into which the material is drained back, thus permitting recirculation of the stripper.

Two Plans

The mechanical operation accomplishes approximately 97% of the desealing, leaving only about 3%, or sometimes less, of the operation for hand cleaning.

Cee-Bee operates its units under two different plans. Under one plan, Cee-Bee includes the use of a portable unit and supervision of the job by its sales engineering department at a flat price of \$4.50 per gallon for the desalant. Under the other plan, Cee-Bee charges a competitive price for the desealing material and a rental price of \$60 a day for the unit. The latter plan is more widely used. It also includes full supervision by the sales engineering department.

Since it put the first unit in operation something over a year ago Cee-Bee has built 11 units, making refinements in each succeeding model.

Marked improvements in the structural design of integral tanks lessen the need for tank repairs in the newer-type planes, but Cee-Bee's system has been successfully applied to one C-124 stripping job and it also has accomplished a very large saving in man-hours on Convair's B-36. At this writing desealing of the tanks in a Constellation is in the works and Cee-Bee is confident it will be able to make nozzle adjustments that will insure a clean stripping job on the Lockheed transport's tanks.

New Aluminum-Plating Bath Developed

Dense, ductile deposits of aluminum are being obtained through a new, practical process for electrodepositing the metal at room temperature.

Developed by D. E. Couch and Abner Brenner of the National Bureau of Standards, the new type of organic plating bath consists of an ether solution of aluminum chloride and a metal hydride.



Finishing School for **GUIDED MISSILES**

The Air Force Missile Test Center, used by all our military services as a long-range proving ground, stretches thousands of miles from Florida, out over the Bahamas, into the South Atlantic.

A pilotless bomber roars away from its launching stand, picks up speed, zooms into the blue. Setting its course for a far-off target in the ocean, it rockets over a chain of tiny islands where men and machines check its flight, its behavior, the operation of its guidance and control systems. It's a vital part of our air power of the future—aeronautical research and development laying the foundation for continued U. S. air supremacy!

Operated by the USAF's Air Research and Development Command, the Missile Test Center is geared up to test the wide variety of missiles, rockets and pilotless aircraft vital to modern air power. It reached its full stature with the recent completion of down-range observation stations. And the dramatic B-61 pilotless bomber, the Matador, designed and produced by Martin as part of its diversified missiles program, was the first to use the completed range. **THE GLENN L. MARTIN COMPANY**, Baltimore 3, Maryland.

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Illustration is artist's conception of Air Force B-61 Matador pilotless bomber.



Automatic Ice Gathering device enables Northrop Aircraft to obtain vital data to determine ice conditions on its F-89. Believed to be the first of its kind, the device consists of three cylinders in the port side of the forward fuselage which protrude about 18 in. outboard, collect ice, and then retract into refrigerated chambers where they remain until analysis can be made after landing. Frank Christofferson, Northrop's experimental flight chief (left) and Lyle Washburn, instrumentation engineer, examine safety screen used to cover cylinders when plane is in the hangar.

New Leg Rests for UAL

United Airlines has developed leg rests which fold under each seat and are held in place by spring clips when not in use. Designed for its Boeing Stratocruisers operating between Hawaii and the mainland, the rests are made of aluminum and padded with foam rubber.

Each rest weighs less than 2½ pounds, adding only 105 pounds to the plane's overall weight. UAL's San Francisco maintenance base is manufacturing the new equipment.

IFALP Charges CAA Creates Safety Hazard

The International Federation of Air Line Pilots approved a single-center-line, high-intensity approach path light system at its recent convention. ALPA President Clarence N. Sayen, elected president of IFALP, commented: "Despite demands by the world's airline pilots and airline operators for an approach light system which is standard the world over, the Civil Aeronautics Administration continues to install different types of systems, creating an air-safety hazard."

"Airline pilots are the principle

users of such lights at commercial fields," Sayen continued, "and since the single centerline approach light system has been endorsed by both airline pilots and airline operators, it appears illogical that other systems continue to be installed."

Propose CAR Change

The Bureau of Safety Regulation has proposed an amendment to Part 60 of the Civil Air Regulations, which presently states that aircraft operating along a civil airway shall be flown to the right of the center-line of the airway.

The advent of the VHF omnirange has made this obsolete, the Bureau feels. It proposes the following change: "Aircraft operating along civil airways shall be flown on the center-line of such airways unless otherwise authorized by Air Traffic Control."

More Money for NACA?

A \$3,500,000 supplemental appropriation request for the National Advisory Committee for Aeronautics has been sent to Congress by President Truman. The money, to be added to the fiscal 1953 budget, would be used for salaries, supplies, and for accelerated research on aircraft structures.

LAS Delivers 2 of 5 BOAC Tourist Connies

British Overseas Airways Corp. has received two of the five Constellations which Lockheed Aircraft Service, Inc., is converting for use in trans-Atlantic tourist operations, with the remainder to be completed by June 2.

The new Connie interior has a total of 70 seats, with a 3-and-2 seating arrangement. Other modifications include installation of Stratos cabin superchargers, new galley with centralized switches and electric ovens, and two new emergency exits.

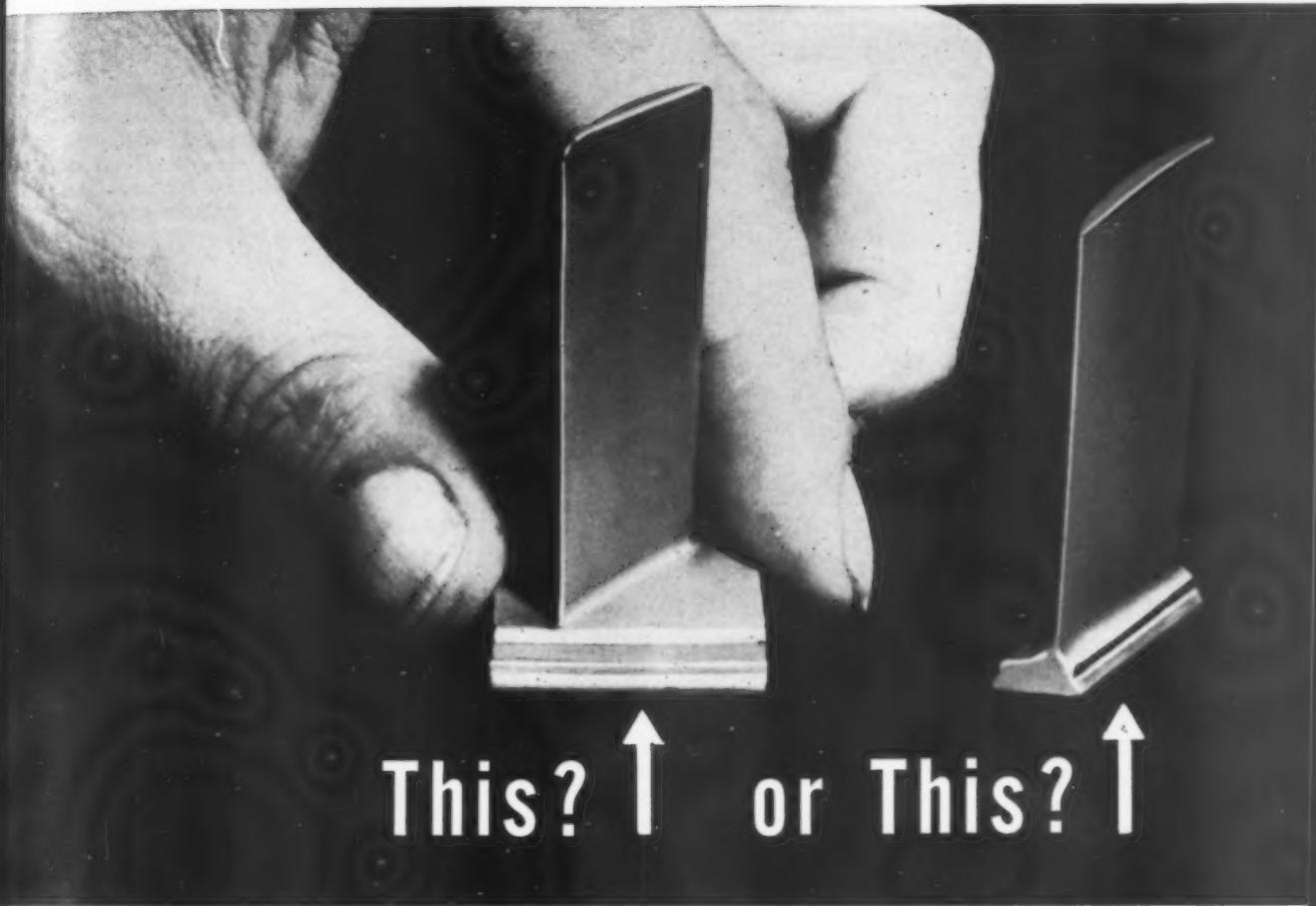
A new public address system has also been installed, which includes five high-fidelity loud speakers.

Daily Plane Utilization

Domestic

		Jan.	Feb.
American	2 eng. pass.	5:49	5:49
	4 eng. pass.	9:18	8:58
	cargo	4:29	4:23
Braniff	2 eng. pass.	6:45	6:22
	4 eng. pass.	7:41	7:49
	cargo	7:52	7:43
Capital	2 eng. pass.	7:04	7:16
	4 eng. pass.	7:33	7:58
	cargo	5:03	...
Caribbean	2 eng. pass.	4:50	5:00
C & S	2 eng. pass.	8:58	9:11
	4 eng. pass.	8:32	8:38
Colonial	2 eng. pass.	6:35	6:37
	4 eng. pass.	6:11	5:08
Continental	2 eng. pass.	6:54	6:58
	4 eng. pass.	5:32	5:34
	2 eng. pass.	7:40	7:48
Delta	4 eng. pass.	9:04	9:39
	cargo	6:18	6:19
	2 eng. pass.	9:19	8:48
Eastern	4 eng. pass.	11:06	10:13
	cargo	:13	...
Hawaiian	2 eng. pass.	4:51	4:28
	cargo	4:46	3:40
Inland	2 eng. pass.	10:06	10:04
	4 eng. pass.	7:02	6:45
	2 eng. pass.	5:43	5:33
MCA	4 eng. pass.	2:16	2:10
	2 eng. pass.	7:19	7:32
National	4 eng. pass.	9:56	10:19
	cargo	5:32	5:01
	2 eng. pass.	6:06	5:57
Northeast	2 eng. pass.	3:57	2:52
	4 eng. pass.	7:10	7:38
	cargo	7:00	...
Trans Pac.	2 eng. pass.	5:34	5:29
TWA	2 eng. pass.	5:00	5:18
	4 eng. pass.	7:29	7:14
	cargo	5:05	4:58
United	2 eng. pass.	5:42	5:56
	4 eng. pass.	8:11	8:01
	cargo	4:13	6:24
Western	2 eng. pass.	6:53	6:56
	4 eng. pass.	8:34	8:30

Which One Will Save a Million Dollars?



Three years in the making, the fabricated jet engine compressor stator blade (left) promises to save the armed forces not just one million, but millions of dollars annually in jet engine costs, compared with the forged blade (right). This new G-E development will cut manufacturing cost in half and save over a third in critical materials. Military approval has been received for the use of fabricated blades in the General Electric J47-GE-23 which powers the Boeing B-47 Stratojet bomber. And G.E., through the United States Air Force, is sharing the process with other turbojet manufacturers.

The blades are rolled in long strips, contoured to the proper air foil, and cut to desired length. Each blade is then welded into a separate base which fills the same

area as the "blade ring" used with forged blades. Thus the ring and an expensive manufacturing and assembly process have been eliminated.

Endurance tests on two engines equipped with the fabricated blades proved them just as efficient as forged blades. The base provides greater resistance to vibration due to uneven airflow through the compressor. Damage caused by foreign objects entering the compressor is minimized because the new blade is fastened much more strongly to the casing.

A product of G-E research at the Thomson Laboratory in Lynn, Mass., this new method of manufacturing stator blades is another of the many ways in which G.E.'s constant pioneering contributes to the advancement of aviation. General Electric, Schenectady 5, N.Y.

210-29

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Maintenance Bulletin Board



PHYSICAL LAYOUT of Radford's heating bench is evident in this photo.

Cylinder Heating Bench Cuts Time 60%

A Pan American World Airways mechanic has been awarded \$500 for the design of a cylinder heating bench which was constructed for \$120 and is now saving Pan American more than 2500 man-hours per year at its Miami overhaul base. The bench is used to heat cylinders to facilitate replacement of exhaust valve seats, guides, and port couplings. This operation depends on the rapid expansion of the cylinder head, as contrasted with the units being removed, when subjected to high temperatures.

The new bench, designed by George

E. Radford, mechanic, first class, is 28 inches high and has four circular holes on its top surface into which fit the engine cylinder skirts of the R-2800, R-2000, and R-4360 engines (see photo).

An open-end gas torch is mounted in the center of each opening approximately one and one quarter inches below the bench level, so that it reaches up $\frac{3}{4}$ inches into the cylinder. The torches have valves permitting them to be turned down low for removal of the cylinders after these have been heated to about 400° Fahrenheit.

The Radford bench, which is now

used at both Miami and PAA's Brownsville, Texas, shops, has replaced the older method of heating the cylinders individually with hand torches, a procedure which took about 17 minutes, resulted in some cooling fin distortion, brittleness, and even cylinder cracks. With the new bench the operation takes about six and a half minutes, heating is uniform, preventing cylinder damage, and an undesirable job of work is eliminated.

Pan American overhauls about 16,000 cylinders per year in Miami.

Non-Destructive Gauge Developed for Coatings

A NON-DESTRUCTIVE method of determining the gauge of protective coatings applied to metal surfaces, such as the ceramic coatings now being widely used on aircraft engine exhaust systems, has been built by the Ryan Aeronautical Co. based on the National Bureau of Standards design. The tool measures the thickness of these coatings within 0.0005 inches.

The instrument head incorporates an electro-magnetic probe coil and an inductance balance indicator utilizing a galvanometer. A plastic rod protrudes through the coil and attaches to the dial indicator gauge. Free to move axially, the rod's movement is measured on the gauge.

A change in inductance of the coil occurs when it is brought close to a metal surface, the metal acting as a short-circuiting device, affecting the coil's inductance over short distances. Measurements are made as follows:

- Instrument is calibrated with an uncoated sample of the metal to be tested. Probe coil is placed against the metal surface with the plastic feeler rod in contact. The dial indicator is set to read zero. Current is turned on and the inductance of the coil is established as a reference by adjusting the bridge to make the meter read zero.

- Coil is transferred to the surface of the ceramic-coated part. Its distance is adjusted until the meter reads zero. This occurs when the coil is the same distance from the metal as it was when the calibration was made. At this point the plastic feeler rod will be displaced a distance exactly equal to the thickness of the ceramic coating. This distance can be read directly from the dial indicator gauge.

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DESIGNER A. J. Chandler demonstrates new wiring test unit.

Test Unit Cuts Wiring Inspection Time

Faster, more positive checking of the overhead instrument panel in Douglas DC-4 aircraft, and the landing gear signal-system wiring of the DC-4 center panel, is provided by an instrument shop test unit designed by A. J. Chandler, assistant foreman at Temco Aircraft Corp.'s overhaul base in Greenville, Texas. The unit makes it possible to check out all the wiring that is mounted on the panel proper in a matter of two or three minutes, instead of the more usual 12.

Unlike the main instrument panels, which are free of external wiring when removed from the panel mounting, the overhead panel carries a mass of wiring from each of the instrument cannon plugs and switches to a single master disconnect plug, which ties the panel to the ship's electrical system. This wiring is generally replaced, in whole or in part, during the aircraft cycle overhauls.

In the Temco unit the master plug is used to connect the panel to the test unit. As each switch or control on the test unit is flicked on or off the instruments give an instantaneous reading which is readily checked. Any wiring discrepancies are apparent.

One switch, for instance, connects the four oil-temperature indicators. Faulty wiring will disrupt the readings in such a manner that all four can be checked at a glance.

Temco has overhauled approximately 800 Douglas DC-4's in recent years. The ingenuity of shop foremen

and mechanics has developed many time-saving devices which pay off in the highly repetitive operations.

Reverse Pitch Wiring System to Be Tested

Reverse pitch wiring system for propellers proposed by Air Line Pilots Association will be tested shortly by Hamilton Standard Division of United Aircraft Corp.

The ALPA system provides a mechanical pressure relief valve to prevent inadvertent reversals. The valve is a manually-operated mechanical device on the engine's nose section and ties into the reversing hydraulic pressure line to the propeller, preventing malfunction caused by electrical system failure.

CAA Directive

CAA has issued an airworthiness directive requiring that all Lockheed Model 18 aircraft converted from military to civil status be checked by June 1, 1953, to determine that a seal has been provided at the inboard end of the integral fuel tanks, inside fuselage, to prevent gasoline fumes from accumulating in the passenger compartment in case of fuel tank leakage.

This work is covered by Lockheed Drawing No. 50829, Change A. Inspection of the area is accomplished by removal of the overhead panels adjacent to the fuselage skin in the number three and four baggage compartments, or by removing floor panels in the cabin.

ODR Replaces NWA's Flood-Damaged Engines

CAA's Office of Defense Requirements has obtained four R-4360 engines for Northwest Airlines, hard-hit by flood damage to its engine overhaul base at Holman Field, St. Paul.

ODR was able to borrow two engines from British Overseas Airways. The Air Force, after agreeing to waive formalities, provided the other two engines with a promise of further assistance if possible.

Brussels SABENA Shop OK'd by CAA for Repairs

Authority to make all major and minor repairs and conduct general overhaul on U. S.-registered DC-3, DC-4, and DC-6 aircraft has been granted to SABENA Belgian Airlines' Melsbroeck airport shops at Brussels by the CAA's international region. Approval includes work on instruments, accessories, propellers, and Pratt & Whitney R-1830, R-2000, and R-2800 engines.

Air carriers or individuals operating abroad in U. S. planes can use these facilities, with CAA approval on completion.

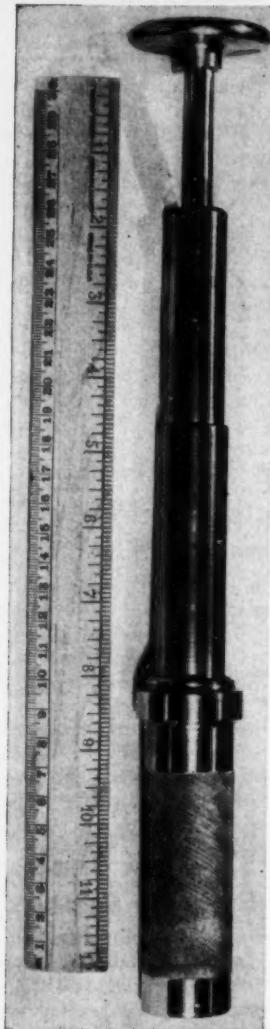
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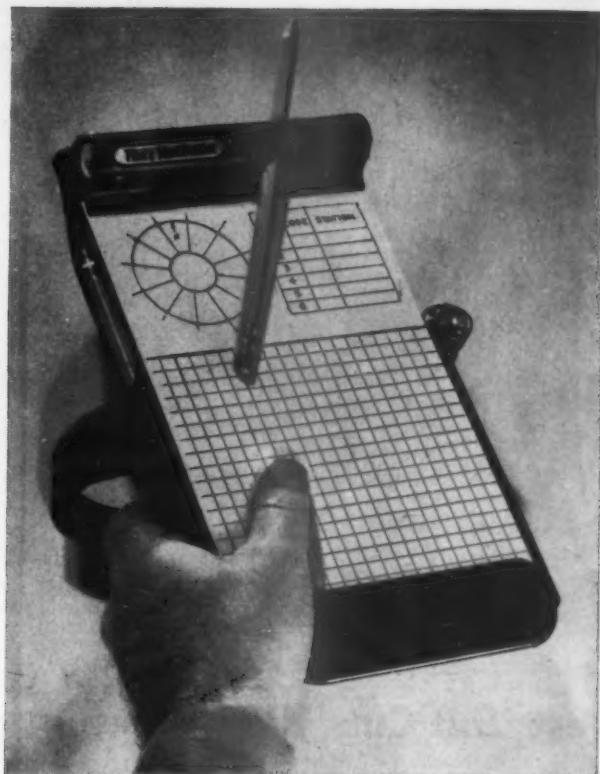
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Impact-Type Tester for fabrics, developed by the Civil Aeronautics Administration (AMERICAN AVIATION, March 31) is now being marketed by Steel City Testing Machines, Inc., 8843 Livernois Ave., Detroit 4, Mich. Fabric tester uses a smooth, rounded plunger operated by a spring-loaded handle to load fabric and determine its condition.



Pilot's Knee Board, being manufactured and distributed by Semco Research, Inc., 212 West Florence Ave., Inglewood, Calif., contains two pencil storage compartments, a coil-spring pencil rest, and built-in pencil sharpener. Held in place on the pilot's leg by an adjustable strip, the knee board provides a mounting panel for chart cards which are held by spring clips. Price: \$4.95. Bracket for mounting stop watch and night light available.



New Approach to industrial cleaning problems, the vacuum cleaner shown above is manufactured by the Vibro-pneumatic Cleaner Co., a division of Patterson Products, 518 Maccabees Bldg., Detroit 2, Mich. Device uses compressed air of 80 pounds psi or more to generate a strong suction by means of a venturi throat. An automatic Vibromatic valve pulses the air at 2,000 intermittent blasts per minute, agitating the material and increasing effectiveness.

New Products

Anti-Staining Paper

Chemically treated interleaving tissue paper for use between aircraft-quality aluminum flat-sheet products to prevent water staining during storage had been developed by the Division of Metallurgical Research of Kaiser Aluminum & Chemical Corp.

The single tissue serves both as abrasion protection, as commonly used for aluminum storage, and as a protection against water staining. Such staining is caused by water formed by condensation and drawn into the minute crevices between the sheets of stacked metal, where a combination of moisture, weight pressure, and lack of air permits corrosive attack. The Kaiser treated paper contains a chemical inhibitor that eliminates the staining. Staining of this type does not alter the physical characteristics of the metal.

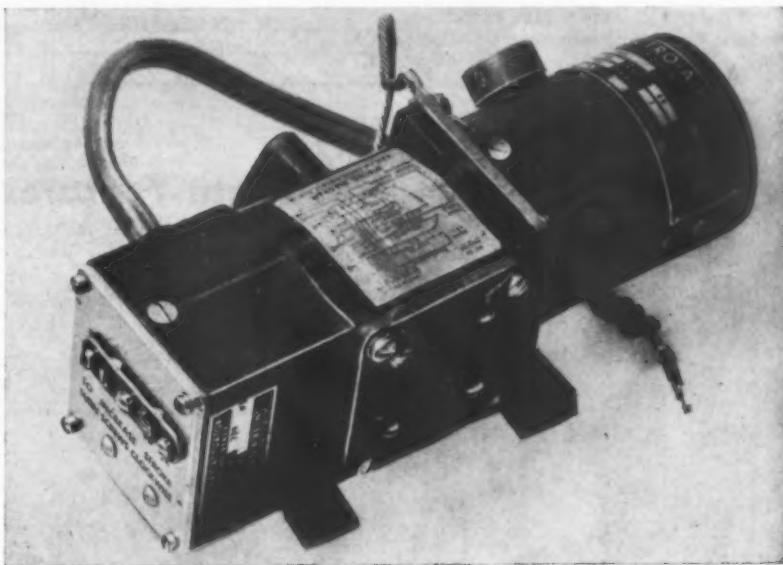
Address: Kaiser Aluminum & Chemical Sales, Inc., Oakland 12, Calif.



Micro Switch

A snap-action switch with a capacity to make or break steady currents of 20 amperes and handle inrush currents as high as 75 amps has been announced by Micro Switch, a division of Minneapolis-Honeywell Regulator Co.

Featuring a roller-plunger actuator adapted to operation by cams with a rise up to 30°, the plunger can be turned to any position to align its roller with the direction of cam action. Characteristics include: 2½ pounds max. operating force, ¼ pound minimum release force, 3/32 inch maximum petravel, 0.010 inch maximum differential travel, 0.187 inch minimum overtravel, and 0.55 pounds approximate weight.



Rotary Actuator Developed

A lightweight rotary actuator, rated at 0.6 horsepower, for driving flexible shafting in remote-operating mechanisms has been introduced by Hydro-Aire, Inc.

Designed for operation on 220-volt, 400-cycle, three-phase alternating current, the actuator motor is operable up to an altitude of 50,000 feet through temperatures ranging from minus 65° to plus 200° F. Output is 13 pound-inches at 2900 rpm output shaft speed.

Limit switches control output shaft and a three-phase a.c. brake stop output shaft within about 10 turns. Intermittent operation is "one-minute on—19-minutes off." Adaptable to 24-volt, d.c. operation. Weighing five pounds six ounces, the Hydro-Aire unit is about 1.25 inches by three inches by 2.75 inches in size and mounted by four bolts.

Address: Hydro-Aire, Inc., Burbank, Calif.

Address: Micro Switch, Freeport, Illinois.



Flush Latch

A new push-button flush latch, designated No. H-4100, has been put on the market by Hartwell Aviation Supply Company. Only exposed parts are the recessed, completely flush, circular button and close button. Finger-tip pres-

sure on the forward button raises the rear button, providing a grip for opening the door. Only one drill-type cut out required.

Available in stainless steel, cadmium-plated, cold-rolled steel, or aluminum alloy, at weights ranging from 0.7 ounces to 2 ounces. Catalog on request.

Address: Hartwell Aviation Supply Co., 9035 Venice Blvd., Los Angeles 34, Calif.

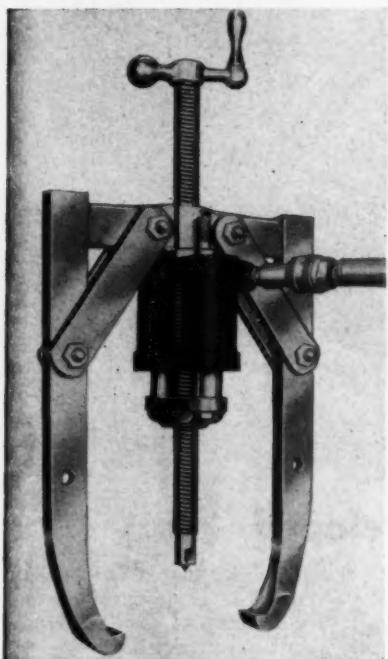
Anti-Rust Paint

An aluminum anti-rust paint which, it is claimed, can be applied to protect and preserve any kind of metal from rusting or which, if applied over rusted surfaces, will penetrate and seal the surface to stop further rusting, has been put on the market by Paramount

Industrial Products Co.

Known as Apex Aluminum Anti-Rust Paint, the product is suitable for use indoors or outdoors, and is said to resist moisture, industrial chemicals, and gases.

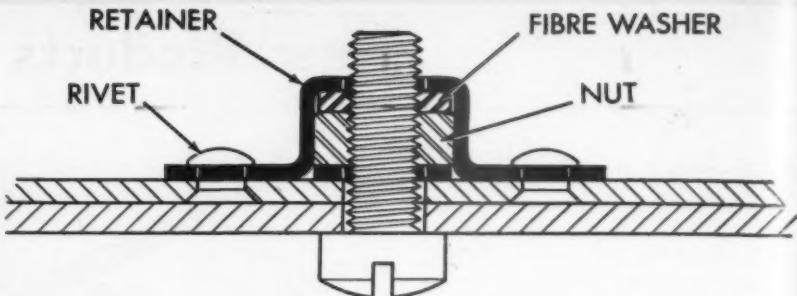
Address: Paramount Industrial Products Co., University Center Station, Cleveland 6, Ohio.



Hydraulic Puller

Taking the hard work out of pulling jobs, the Power-Twin hydraulic puller introduced by Owatonna Tool Company is readily adaptable to the three common sizes of OTC Grip-O-Matic Pullers—the 1003L, 1003½L, and 1003½. Eliminating torque, the Power-Twin is also adaptable to push-pullers, or bench or pedestal presses.

Address: Owatonna Tool Co., 403 Cedar St., Owatonna, Minnesota.



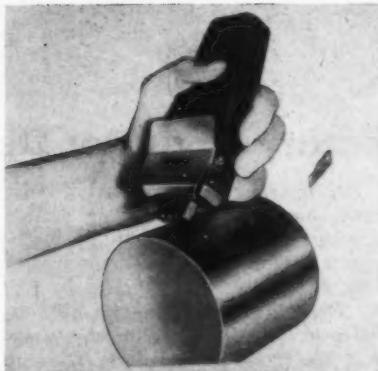
Nut Plate Features Fibre Washer

A self-locking nut plate featuring a stamped square nut and fibre washer housed in a sheet metal retainer has been introduced by Tinnerman Products, Inc.

The fibre washer provides the self-

locking feature in the nut. Entire assembly meets military aircraft specifications. Available in 8-32 and 10-32 sizes, the unit is made from strip stock.

Address: Tinnerman Products, Inc., P. O. Box 6688, Cleveland 1, Ohio.



Marking Tool

A simple tool for marking convex surfaces, such as rods, bars, tubes, and shafts, is being marketed by The Acromark Company.

Using ordinary straight-line, flat-surface marking type in combination with insert segments, the tool provides

a convex surface. Standard sizes have four-, six-, eight-, and 10-piece capacities, with sizes ranging in 16ths and 32nds from 1/16 to 1/4 inch.

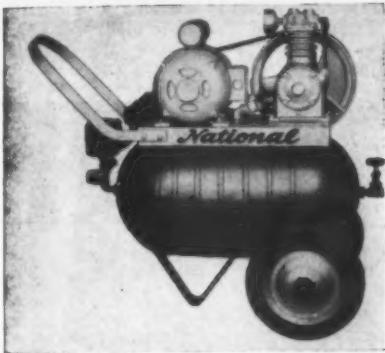
Address: The Acromark Company, 418 Morrell St., Elizabeth 4, N. J.

Selector Valve

A balanced-type, four-way hydraulic selector valve, electrically controlled and pilot operated, is now available from General Controls Co.

Known as the AV-14, the new valve is part of the company's "hi-g" line for use in jet aircraft, guided missiles, and rockets. Features specially hardened and optically ground metal sealing surfaces, peak performance even at system pressures below 100 psi, and two choices of porting arrangements in neutral. Available with manual over-ride.

Address: General Controls Co., 612 So. Flower St., Los Angeles 17, Calif.



Portable Compressor

A piston-type, portable air compressor featuring automatic pressure regulation and rated for 2½ cubic feet per minute at 100 pounds pressure has been designed by National Tool & Equipment Co.

Known as the Model B-100, the unit has a 12-gallon, stainless steel air receiver, and a V-belt-driven ½ horsepower capacitor motor operating off 115/230-volt, single-phase current. The heavy-duty industrial compressor has a 10-inch fan spoke flywheel. Price: \$160.

Address: National Tool & Equipment Co., 1807 W. Lake St., Chicago, Ill.

Hi-Temp Solenoid

Development of a new insulating varnish for use on electrical components has made possible a new solenoid now being produced by Jack & Heintz for jet aircraft engines.

Capable of operating over 100 hours at 500° F. ambient temperature, the JH 2800 solenoid has actually operated at close to 600° F. Coil is also impervious to salt spray and fungus. Operates at voltages from 14 to 30 volts direct current and from minus 67° to plus 500°.

Address: Jack & Heintz, Inc., 17600 Broadway, Cleveland 1, Ohio.

Technical Literature

TEMPERATURE CONTROLS: Three-color 52-page Catalog No. 400, describing design, operating characteristics, and installation of each of the 10 variations on basic Fenwal thermostatic device, is available through Fenwal Incorporated, Ashland, Mass. A special section on selection and application of the Thermoswitch temperature controls deals with operating differential, sensitivity, temperature variation, lag and overshoot, characteristics of heat sources, frequency of switching, and installation in solids, liquids and gases.

Drawings, photographs, graphs, and tables cover principles of the basic

Thermoswitch and why it is sensitive only to heat; modifications; special features; protective wells; and the Fenwal Temperature Test Kit. Dimensional drawings and thermal and electrical specifications are given for both the standard and heavy-duty types. Typical applications of each model are described and illustrated.

GROUND FITTINGS: A new chart, prepared by The Thomas & Betts Co. Inc., Butler St., Elizabeth 1, N. J., is meant to simplify the proper selection of ground fittings by showing how the 30 common combinations of different ground wire and water pipe sizes can easily and quickly be made from only 10 stock parts. With charts giving complete catalog ordering information, UL

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There's more! Because of the popularity of the new Government Procurement and Production section, which appeared in the Fall-Winter Edition of the Directory, it is being continued and enhanced. Here are listings of government agencies with names of proper officials to contact for filing bids . . . from the Air Force to Production Administration and their regional offices. In addition, the Directory's FOREIGN SECTION has been separated for faster reference.

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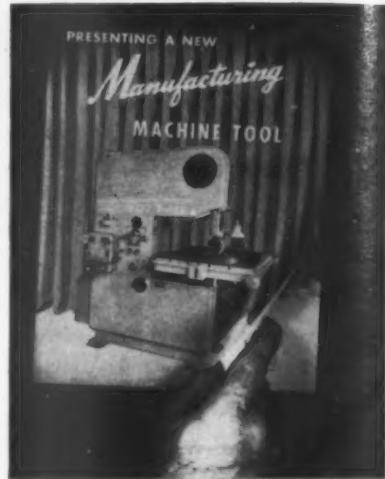
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approved ground fittings for all sizes are illustrated, including pipe sizes from $\frac{1}{2}$ in. iron pipe or copper tubing up to 6 in. iron pipe.



BANDTOOLED MACHINE: A new, colorful 16-page brochure covering the Contour-matic, an hydraulically-operated bandtooled machine, is available from the DoAll Company, Des Plaines, Ill. Illustrations help explain band-machining, giving the features of the Contour-matic in detail, types and how to adapt the machine to specific production jobs.

ELECTRONIC INSTRUMENT CONNECTORS: A six-page two-color brochure gives details on Continental Connector Corporation's complete line of miniature precision multi-contact connectors, stand-off and feed-through terminals and terminal blocks used for such electronic instruments as computers, radar equipment and plug-in units for packaging components. The illustrated folder is available through the sales agent, De-JUR Amsco Corp., Industrial Division, 45-01 Northern Blvd., Long Island City 1, N. Y.



WASHERS: Joliet Wrought Washer Co., Joliet, Ill., has produced an eight-page catalog with a complete listing of its washers plus a section of interest to purchasing and stock departments.

Airline Commentary

By Eric Bramley



HOW CAR rental services, such as Hertz, National Car Rental System, and Avis are helping the airlines is well illustrated by a letter to Couture Motor Corp., Miami Beach, an affiliate of National Car. The writer of the letter, Roger H. Ferger, publisher of the Cincinnati *Enquirer*, had always driven to Florida for his vacation. However, this year he flew, and in sending his check to Couture for the car which he rented in Florida, he said:

"It is really a pleasure to pay this bill. This is the first time I have used your service, and I am frank to tell you it is the best of its kind I have ever experienced. The car assigned for my use was delivered promptly . . . and your service throughout the term of my use was so complete that all I had to do was drive the car. Your mobile unit serviced the car every morning before I was ready to use it—thoroughly cleaning it, filling it with gas, checking the oil, water, etc.

"I have frequently driven one of my own cars to Florida but never will do so again. Your service eliminated for Mrs. Ferger and me the long, irksome drive to Florida, saved the wear and tear and exposure to sea air on my own car and, at the price you charged, I believe, saved me money over what it would have cost me to drive my own car to Florida."

An excellent example of how good car rental service results in increased business for the airlines.

Want to make yourself a little money? Robinson Airlines, local service line with headquarters in Ithaca, N. Y., wants to change its name. Anyone in the industry can submit suggestions. If you come up with the winner, you receive \$100 plus 50 shares of Robinson stock. Second prize is \$50 and 25 shares; third prize is a portable radio. So why not study Robinson's routes, think up a good name, and submit an entry?

Not so long ago, the city of Wheeling, W. Va., held an Air Transportation Week. During the week, local employees of All American Airways, Capital Airlines, and TWA were to spend nothing but silver dollars, using them for groceries, haircuts, cleaning, laundry, etc. Inasmuch as cartwheels are seldom seen in that section of the country, the number circulated during the week would give a good indication of what the airlines mean to the economic life of the community. Sounds like a smart idea. We don't know whether it's possible to find out how many silver dollars were in circulation, but we're trying, and we'll pass along the results if successful.

A veteran traveler reports to us that the most newspaper-famished newsstand at any airport in the country seems to be the Dobbs House concession at Love Field, Dallas. Most of the time they're out of papers, he states, and there are plenty of passengers coming through wanting to catch up on the news. How about remedying the situation, Dobbs House?

Last issue we commented on the fact that Scandinavian Airlines System is publishing an unusual houseorgan, using four languages—Danish, Norwegian, Swedish, and English. George Herrick, U. S. public relations director for SABENA Belgian Airlines, writes to say that, "We experience it in a less aggravated form.

"Our employee bulletin, *Notre SABENA*, the annual report of the company, and our house magazine, *SABENA Revue*, manage to combine French and Flemish plus a reasonable amount of English. The annual report is a particularly happy solution to the problem of using two languages. Read it one way and it is all French. Reverse the report and turn it upside down so that the back cover is the front cover, and you have the report in Flemish. The employee bulletin uses all three languages for news items. So does *SABENA Revue*.

"While we are on the subject of manipulating languages, here are just a few spoken in the SABENA-U.S. organization: French, Flemish, Dutch, Norwegian, Danish, Swedish, Greek, Arabic, Swahili (Congo), Yugoslavian, Czechoslovakian, Italian, German, Yiddish, and, of course, English in all cases."

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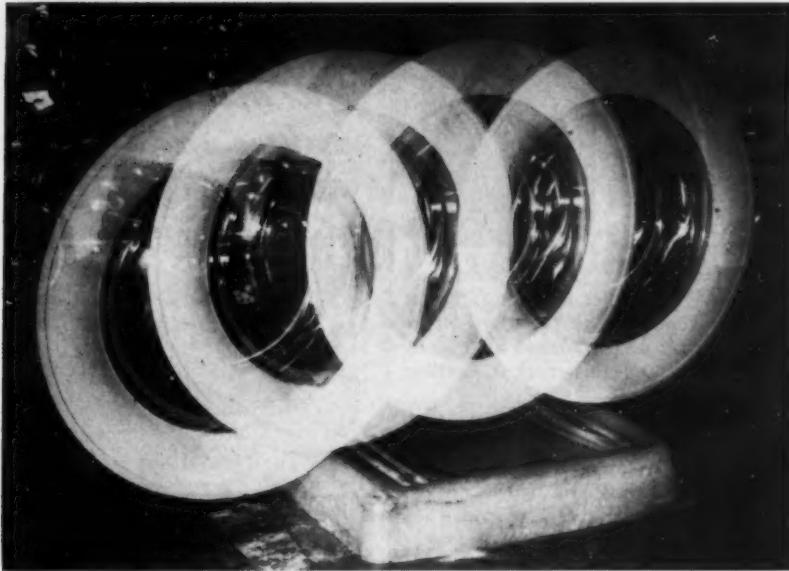
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CAR RUNNING OVER LID of a Koch Fiberglas two-suiter won't crush it, manufacturer claims.

Baggage Makers Aim for Durability

Fiberglas, plastics, coated canvas, vinyl used in attempt to prolong luggage life in air travel.

Following are additional comments of luggage manufacturers on the article in *AMERICAN AVIATION* of March 31 entitled "What Luggage Stands Up Best in Air Travel?" In the article, 10 top airline traffic and sales executives admitted the seriousness of the "baggage smashing" problem, but knew of no research that had been conducted to determine what types of luggage might be suitable for air travel.

J. M. Commons, sales manager, Hartmann Co., Racine, Wis.

We believe we are the only manufacturer in this industry that has made a scientific approach to the needs of the air traveler and, as a result, now offer a complete line of luggage (Skymate) for both men and women, specifically designed for air travel.

Before the war, when the air travel baggage allowance was lower than it is now, both airlines and travelers were convinced that the primary need was for light luggage. Therefore, we originated the Knockabout, a soft-side leather two-suiter, in which we eliminated the box-type construction. Weight was about 9½ lbs.

However, because of the rough treatment that baggage sometimes receives on the airlines, the Knockabout was not the complete answer, since the leather was getting scratched and dam-

aged and the bag would be crushed out of shape. Our conclusion was that while weight was important, durability was more important.

In the early 1940's, we tried a new design (which eventually became Skymate). It was tested during the war by Pan American World Airways' chief pilots and flight crews, who carried it all over the world. Results were very satisfactory.

At about the same time, the Navy wanted some luggage for aviation cadets, and we built the Seapack line for them, similar to the design tested by PAA. It too was very successful. Thus, we had the benefit of the PAA tests plus the Navy's experience. The Skymate designed for civilian use turned out to be a much-improved Seapack.

Square Edges

The Skymate has square rather than rounded edges. It has a plywood base, and is protected on all edges by a hard vulcanized fiber, stitched with countersunk nylon. Corners are protected by small brass shields. The two-suiter weighs about 10½ lbs. and is available in three types of coverings: coated canvas, vinyl, or rawhide. Price range for the two-suiter is from \$59.50 to \$140 plus tax.

Skymate would be easier to sell if we also had a leather covering. This

we refuse to do, however, because we don't believe it would be a satisfactory product—scratches and gouges would ruin its appearance.

Edward B. Stein, sales manager, Stebco Products, Stein Brothers Manufacturing Co., Chicago, Ill.

We think you will like to know that the Railroad Baggage Traffic Managers' Association some time ago recommended to all its members the use of Tufide for the replacement of all damaged two-suiters and companion bags that they had to make. They could, of course, not come out openly and endorse our luggage, but I am sure that if you will note the enclosed photostat from them and if you care to check with some of their directing heads, they will verify this statement.

Further, in the past few months, Mr. Tom Braniff, of Braniff Airways, has been testing with much interest and satisfaction Tufide two-suiters. As a matter of fact, some of our recent improvements were recommended by him . . .

(Tufide, made of plastic, will "outlast, outwear, outperform leather," the company claims. Laboratory friction tests, it states, show that 3,000 strokes by an abrasion machine wear through top grain cowhide, but "merely scratched the surface" of Tufide.—Ed.)

M. P. Koch, H. Koch & Sons, San Francisco, Calif.

I have read the article in your March 31 issue . . . and am very much surprised at the comments made on the various types of luggage.

We are manufacturing the same types of luggage that have been commented on, but in addition to these we manufacture Fiberglas luggage which is as much a departure from the average type of luggage (which is hard-side and soft-side luggage) as the automobile is from the horse and buggy . . .

Our luggage is the only luggage that will not dent, scuff or mildew, and is impervious to acids, dyes, etc. It can take all of the abuse that air travel or any other mode of travel can give without any effect on the luggage . . .

(This luggage, plastic reinforced with Fiberglas, is advertised as "lighter than aluminum, stronger than steel." It is "virtually shock-proof, can be cleaned with steel wool, is the only luggage which may be checked without a cover." Manufacturer claims it has been successfully tested in many miles of travel by government aviation officials. Man's two-suiter sells for \$54.50—Ed.)

People

TRAFFIC AND SALES

Randall Holden has become cargo sales representative in New York City for Philippine Air Lines.

Charlotte A. Dormuth promoted by American Airlines to manager of reservations and ticket offices at Toronto. She was succeeded as Philadelphia city ticket office manager by **Betty K. Musser**.

Spencer V. Rice has been named sales manager at Richmond for American Airlines replacing **J. R. Snyder**, resigned.



Tobin



Wilson

Jack C. Tobin, former salesman for United Air Lines in Los Angeles, has been named district sales manager for the company at Dallas. **David Wilson** of United's Washington sales staff has assumed a similar post in Baltimore. They succeeded **Howard J. Fellows** and **John Sivertsen** who moved as d.s.m.'s to Detroit and Akron, respectively.

OPERATIONS-MAINTENANCE

Emmett R. Merrett, service supervisor for American Airlines at Fort Worth, has been upped to the post of manager of operations. He succeeds **Hugh Gallemore** who has transferred to Tulsa as manager of production and plans.

L. E. Koerner, formerly fleet service supervisor at Northwest Airlines' Holman Field overhaul base at St. Paul, has become maintenance division manager. **A. O. Jarvis** was appointed to replace Koerner.

Mal B. Freeburg is now manager of Transocean Air Lines' contract operation for the U. N. in the Trust Territory of Pacific Islands. Freeburg formerly was a chief pilot for Northwest Airlines.

William H. Benge, former airline pilot and CAA air carrier inspector, has been appointed assistant director of operations for Transocean Air Lines.

J. R. Qualm and **E. F. Cullerton** are now flight managers for United Airlines at Chicago and Denver, respectively. Qualm and Cullerton were formerly United pilots.

Louis B. Caraciolo named station manager for Pan American World Airways at Curacao succeeding **Blake Andrews**, who has been transferred to Pan Salvador.

Thomas Craig O'Connor, formerly with "The Billboard," has joined TWA's public relation staff and is assigned to the New York production department.

Edwin Zak named TWA overseas regional superintendent of maintenance

with headquarters in Paris. Zak replaces **J. T. Davis** who completed his overseas tour of duty and has returned to the U.S. for special assignment. **E. E. Canady** succeeded Zak as manager of technical services function at TWA's Kansas City overhaul base.

J. A. LeBlanc, former Norfolk reservations manager for National Airlines, has been appointed station manager at Richmond, Va.

Will G. Ostrum appointed office manager of the Dallas, Tex., general offices of Pioneer Airlines.

Rita V. Copelman has become office manager of Colonial Airlines' general headquarters in New York.

Herbert F. Blossey, assistant station manager for United Air Lines at Cleveland since 1945, has been appointed station ground service manager for the company at Detroit.

D. P. Thurber is now chief pilot for the international division of Philippine Air Lines.

ADMINISTRATION

Arthur E. A. Mueller, Wisconsin industrialist, named to the newly-created post of board chairman of Wisconsin Central Airlines.

Dr. Eurico Arnaldo Guedes de Araujo has been appointed general manager

of Panair do Brasil. **Dr. Paulo Sampai**, president of the airline, has been performing the functions of the general manager's post in addition to his own duties for the past two years.

Milton Garrison appointed director of analysis and reports, Trans World Airlines, succeeding **Henry McGrew**, who has entered private business after 12 years with TWA. Garrison joined TWA in 1945 as manager of cost accounting and for the past three years has been assistant to the controller.

ORGANIZATIONS

O. M. Mosier, vice president of American Airlines, has been elected president of the Wings Club, New York.

J. W. Thomas, revenue auditor of Northwest Airlines, has been elected president of the Airlines Clearing House. Thomas was vice president in 1951 and succeeded **J. A. Kilcarr**, outgoing president.

Dr. Harold B. Dye, Trans World Airlines director of medical service, elected president of the Airlines Medical Directors Association. He has also been installed as a vice president of the Aero Medical Association.

Guy M. Springer, manager of cargo sales for Capital Airlines, elected chairman of the Cargo Advisory Board of the Air Traffic Conference of America.



Airline Pilots Association committee appointed to evaluate the Convair-Liner 340 is welcomed at Consolidated Vultee's San Diego plant by Ben O. Howard, special consultant to Convair's board chairman. Left to right, Howard; A. G. Place, Braniff; Ted G. Linnert, ALPA, and chairman of the committee; John Myer, VAL; L. Homer Mouden, MCA; Herchel Clark, National; Peter Dana, Northeast; Allen P. Shelly, Continental; Lloyd Damron, C&S; L. L. Caruthers, Delta; and H. L. Jacobson, VAL.

SUMMARY OF U. S. DOMESTIC AIRLINE TRAFFIC FOR JANUARY, 1952

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON-MILES ***	EXPRESS TON-MILES	FRIGHT TON-MILES	TOTAL TON-MILES	REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES C. -PLATED
American	344,446	200,668,000	296,244,000	67.74	1,481,165	831,321	3,153,489	25,209,225	39,434,542	63,93	6,726,474	6,996,613	94.95	
Braniiff	65,787	23,562,000	38,711,000	60.74	1,377,538	81,321	133,520	2,607,258	5,035,222	51,78	1,044,022	1,063,056	97.81	
Capital	129,576	39,852,000	82,590,000	48.25	179,365	186,508	337,154	4,508,130	10,687,879	42,18	2,045,150	2,391,869	91.58	
Caribbean	10,309	830,000	1,703,700	48.74	910	—	2,999	70,643	165,506	43,65	64,215	62,993	100.00	
C & S	36,614	14,305,000	25,158,000	57.66	57,242	65,665	101,717	1,613,700	3,068,011	52,59	759,224	799,769	93.85	
Colonial	17,076	4,333,000	9,463,000	45.79	11,173	7,314	9,467	463,580	978,963	47,35	292,847	316,632	92.12	
Continental	26,864	10,494,000	21,194,000	49.51	46,512	13,070	55,866	1,119,974	2,298,656	48,72	657,610	639,685	99.43	
Delta	78,114	38,312,000	59,858,000	64.84	164,606	107,823	310,847	4,323,043	7,340,073	58,90	1,555,039	1,547,159	97.83	
Eastern	279,775	142,885,000	229,098,000	62.27	492,704	325,233	573,552	16,627,329	31,977,325	52,00	5,222,953	5,097,309	96.60	
Hawaiian	27,823	3,639,000	5,994,000	60.71	2,116	7,933	82,863	390,891	756,666	51,66	293,491	215,990	99.02	
Inland*	9,089	3,736,000	5,999,000	62.28	19,328	6,045	12,543	396,032	665,504	59,51	247,330	260,090	95.00	
MCA**	30,224	9,322,000	17,935,000	51.99	37,453	19,096	37,313	982,241	1,878,202	52,30	760,133	722,216	90.78	
National	65,178	46,007,000	68,626,000	67.04	129,893	67,328	465,847	5,355,992	9,062,238	59,10	1,565,700	1,526,692	97.51	
Northeast	24,538	4,774,000	10,090,000	47.31	13,148	15,409	14,268	486,176	1,009,038	48,18	334,687	409,232	81.04	
Northwest	46,700	32,521,000	55,980,000	58.09	204,947	125,674	258,307	3,790,252	7,334,025	51,63	999,452	1,080,872	39.81	
Trans Pac.	12,191	1,500,000	3,443,000	43.56	1,495	206	3,793	121,429	314,764	38,58	123,859	107,924	99.74	
TWA	161,958	123,349,000	176,513,000	69.88	1,072,214	557,258	1,196,708	14,645,013	23,413,746	62,55	4,275,528	4,582,912	92.39	
United	219,106	147,123,000	217,659,000	67.60	1,725,318	817,297	1,957,732	18,598,720	32,772,300	56,75	5,204,809	5,397,431	94.37	
Western*	45,232	16,747,000	29,676,000	56.43	101,847	33,009	44,870	1,779,458	3,108,369	57,25	784,106	816,960	95.60	
TOTALS	1,630,998	864,684,000	1,355,934,000	63.77	5,875,274	3,266,138	8,754,855	103,089,276	181,301,829	56,86	32,864,649	33,836,004	94.55	
• Operates as Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.														
** Figures do not include operations of total service segment (route 106) carried separately on local service airlines.														
*** Includes air parcel post.														
NOTE: Figures in above tabulation include both scheduled and non-scheduled operations.														

SUMMARY OF U. S. INTERNATIONAL AIRLINE TRAFFIC FOR JANUARY, 1952

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	U. S. MAIL TON-MILES **	FOREIGN MAIL TON-MILES	EXPRESS TON-MILES	FRIGHT TON-MILES	TOTAL TON-MILES	REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES C. -PLATED
American	10,268	8,199,000	12,414,000	66.05	16,038	5,388	395	142,664	1,047,967	1,717,020	61,03	242,171	240,066	98.95	
Braniiff	2,917	5,680,000	15,470,000	56.72	28,218	4,965	—	137,120	806,335	2,225,970	36,22	364,662	364,949	99.92	
C & S	2,530	3,035,000	6,314,000	48.07	4,772	733	—	94,873	416,279	874,323	47,61	136,651	132,902	94.96	
Colonial	1,882	1,470,000	2,889,000	50.88	1,415	616	—	2,174	163,111	3,646,168	47,12	56,314	49,861	100.00	
Eastern	7,443	10,369,000	15,334,000	67.62	38,924	—	—	66,176	1,233,245	2,704,303	45,60	259,054	265,502	97.57	
National	8,686	2,266,000	4,133,000	54.88	1,112	—	—	3,158	254,134	552,930	44,33	77,466	79,546	95.27	
Northwest	5,145	8,370,000	17,556,000	67.68	134,668	33,821	11,286	463,685	1,537,998	2,700,230	56,92	521,440	563,397	92.77	
Panagra	9,453*	10,997,000	18,062,000	55.90	36,250	23,510	201,658	—	1,383,254	2,502,381	55,29	499,211	496,535	99.43	
PAA	69,629	62,700,000	104,649,000	59.91	269,533	67,504	—	2,144,709	8,841,287	13,976,626	63,26	2,488,139	2,038,717	99.86	
Latin Amer.	22,309	31,244,000	55,235,000	56.59	444,462	106,983	—	1,272,264	5,337,607	8,304,406	64,27	1,357,116	1,337,177	97.76	
Atlantic	6,126	21,644,000	41,069,000	52.70	347,978	45,789	—	486,624	3,266,041	6,095,203	53,58	844,338	849,614	95.40	
Pacific	3,115	3,519,000	9,364,000	37.58	37,649	—	—	328,760	735,684	1,357,255	54,20	217,233	215,168	91.32	
Alaska	9,020	23,428,000	44,392,000	52.78	419,137	134,931	—	—	652,203	3,787,589	5,781,770	65,51	1,077,308	1,089,826	95.85
TWA	3,873	9,591,000	13,842,000	69.29	62,031	—	—	—	52,761	1,133,274	1,999,519	56,68	262,627	262,627	100.00
TOTALS	162,396	201,614,000	360,703,000	55.89	1,841,587	427,240	216,497	5,864,037	29,943,105	51,138,101	58,55	8,203,630	7,794,867	97.93	
* Figure is preliminary.															
** Includes air parcel post.															
NOTE: Figures include both scheduled and non-scheduled operations.															
Data in above tabulations were compiled by American Aviation Publications from reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to South America; Colonial to Venezuela; Eastern to Puerto Rico; National to Havana; Northwest to Orient and Honolulu and United to Honolulu. Operations of U. S. carriers in Canada are included in domestic reports to CAB in accordance with CAB filing procedures.															

U. S. AIRLINE BALANCE SHEET DATA AS OF DECEMBER 31, 1951

AIRLINES	TOTAL ASSETS	CURRENT ASSETS	INVESTMENTS & SPECIAL FUNDS	OPERATING PROP. & EQUIPMENT	DEFERRED CHARGES	CURRENT LIABILITIES	LONG-TERM DEBT	DEFERRED CREDITS	OPERATING RESERVES	CAPITAL STOCK	SURPLUS			
American	\$143,653,049	\$ 57,506,635	\$ 16,522,217	\$ 66,506,655	\$ 3,088,650	\$ 37,317,956	\$ 30,000,000	\$ —	\$ —	\$ 4,464,608,085	\$ 29,875,008			
Braniiff	16,030,417	6,652,229	580,737	8,441,037	356,434	5,835,265	1,032,453	—	145,074	2,500,000	6,517,626			
Capital	19,502,014	8,763,374	605,057	9,540,632	393,033	7,938,951	3,420,281	181,950	42,847	781,578	7,136,307			
Caribbean	548,431	318,793	4,008	206,896	8,583	149,633	—	7,498	43,442	94,538	253,320			
C & S	11,415,577	4,446,504	310,655	6,456,808	153,884	4,036,693	500,000	20,892	—	4,893,645	1,966,347			
Colonial	3,534,370	2,360,889	78,760	997,563	97,158	1,208,182	—	77,449	167,007	515,600	1,566,332			
Continental	4,973,924	2,833,485	438,974	1,603,077	188,099	1,748,309	600,000	4,544	28,397	387,039	2,205,635			
Delta	17,431,631	8,887,359	386,740	7,942,169	215,363	7,376,023	650,000	64,255	148,628	1,500,000	7,692,725			
Eastern	104,258,296	60,551,008	18,784,295	24,061,755	861,238	35,408,967	27,500,000	504,334	2,772,043	2,395,572	35,676,781			
Hawaiian	2,749,620	1,622,171	393,586	736,557	2,161	525,508	—	9,680	—	1,730,000	4,664,432			
Inland*	1,661,335	1,432,304	2,635	108,476	9,363	997,138	—	1,566	—	164,218	898,411			
MCA	7,612,055	3,510,990	244,267	3,177,455	679,343	2,066,720	3,119,225	155,282	78,427	418,755	1,773,645			
National	18,126,760	9,326,030	1,613,706	6,933,344	253,454	8,290,637	—	91,242	250,688	1,000,000	8,494,191			
Northwest	4,938,053	2,204,334	210,737	2,488,251	26,506	638,245	7,99,500	9,552	21,789	924,889	2,273,039			
Northwest	47,150,531	16,943,033	797,933	28,741,853	663,937	3,275,356	45,444,883	99,832,048	2,428,369	—	17,829,705	4,444,820		
Panagra**	20,805,606	14,901,936	745,369	4,597,916	560,385	6,983,662	200,000	255,021	2,759,103	4,750,000	5,857,820			
Trans Pacific	192,916,808	77,308,410	15,055,497	75,356,727	24,474,652	99,130,303	27,750,000	8,438,525	4,062,068	6,145,082	87,418,731			
TWA**	832,156	198,422	143,237	259,591	202,311	638,245	99,500	9,552	21,789	924,889	-864,810			
TWA**	121,798,100	49,624,407	12,007,312	56,538,273	3,275,356	45,444,883	99,832,048	2,428,369	—	12,169,360	21,943,440			
United	132,725,286	43,922,019	7,997,748	57,526,459	663,934	40,155,823	15,288,000	1,176	—	27,026,391	30,253,898			
Western*	13,738,977	5,295,899	1,701,571	6,310,343	261,625	5,686,979	1,924,000	7,215	—	550,164	5,570,619			
TOTALS	866,402,816	380,590,230	78,534,021	368,513,817	36,434,583	285,750,374	162,055,970	12,948,761	10,568,647	133,951,156	261,116,111			
• Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.														

Financial News

United Air Lines' net earnings for the first quarter of 1952 were \$652,690, against \$1,058,679 in the same 1951 period. Revenues reached a record \$32,163,600, up 16%, but operating expenses were up 21% to \$29,996,045..

American Airlines reported net profit of \$984,834 for the March quarter, against adjusted net profit of \$2,450,000 for the first three months of 1951, such adjustments representing changes made in the latter months of the year but pertaining to the first quarter.

Delta Air Lines had net profit of

\$1,275,216 after taxes for first nine months of its fiscal year, ended March 31. This represents a gain of 8% over the \$1,180,073 net for the same period a year ago, although tax payments increased from \$1,194,549 to \$2,342,595. Income for the three months ended March 31 was \$490,535 after taxes, on gross revenues of \$7,525,246.

Mid-Continent Airlines reported record gross of \$9,818,363 for 1951 but wage and price increases reduced net earnings to \$135,941. Operating expenses were up nearly \$2 million to \$9,508,859. Earnings may be increased when pending mail rate proceedings are concluded.

Los Angeles Airways had 1951 net

profit of \$54,289 compared with \$5,152 for 1950.

Seaboard & Western Airlines' 1951 net profit was \$702,936, including a non-recurring capital gain of \$184,921, on gross revenues of \$10,784,342.

California Eastern Airways had 1951 net income of \$335,534 on operating revenues of \$6,340,280, compared with \$244,103 profit in 1950 on \$2,383,110 revenues.

U. S. Airlines reports net profit of \$27,811 for the March quarter on \$390,894 revenues. It was the first profitable quarter since the airline began operations in 1946.

LOCAL SERVICE AIRLINE REVENUE AND EXPENSES FOR QUARTER ENDING DEC. 31, 1951

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT* REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	\$ 913,545	\$ 422,321	\$ 132,264	\$ 1,616	\$ 1,525	\$ 38,275	\$ 977,386	\$ 486,477	\$ 490,909	\$ -63,531	
Bonanza*	244,242	103,999	132,413	434	2,117	1,151	2,581	292,536	128,581	163,955	-\$8,294
Central	381,676	75,153	285,504	636	2,941	619	21,268	411,630	155,410	256,220	-\$9,954
Empire	272,307	105,726	147,490	2,291	* * *	500	14,961	262,575	136,679	125,896	9,932
Frontier	1,111,049	357,518	710,355	7,029	22,076	2,417	9,998	1,117,077	520,623	596,454	-\$5,228
Lake Central	166,838	72,820	121,091	5,839	* * *	503	7,540	315,000	126,507	188,493	-\$16,162
MCA**	204,537	132,562	61,492	3,820	2,724	472	3,123	247,014	101,005	146,009	-\$2,477
Mid-West	99,211	5,134	93,976	* * *	* * *	27	92,721	34,516	58,205	6,490	
Omeara	635,026	144,884	484,893	4,452	* * *	781	* * *	671,680	350,956	320,724	-\$6,654
Piedmont	933,266	675,943	232,076	7,654	9,656	4,403	958,406	456,501	501,905	-\$25,160	
Pioneer	964,859	650,701	264,480	6,673	18,887	4,753	20,255	886,428	417,501	468,927	78,430
Robinson	958,580	280,367	637,171	6,354	5,973	657	18,562	486,755	260,725	226,030	473,825
Southern	854,108	291,103	550,960	8,333	* * *	1,282	612	779,335	383,682	395,653	74,773
Southwest	562,106	314,674	216,032	4,227	9,064	1,213	8,180	613,126	267,858	345,268	-\$1,020
Trans-Texas	682,183	250,294	413,917	2,349	7,079	1,469	6,565	714,869	317,799	397,071	-\$2,685
West Coast	332,371	139,366	176,934	1,680	3,107	510	9,621	299,968	131,974	167,994	32,403
Wiggins	127,843	5,031	121,650	570	* * *	8	242	67,484	22,426	45,058	60,359
Wis. Central	595,973	223,328	361,921	6,960	* * *	1,238	* * *	569,721	276,567	293,154	26,252
TOTALS	10,041,030	4,250,924	5,444,619	85,846	83,624	23,528	161,783	9,763,711	4,575,785	5,187,925	277,319
					Helicopter Mail Service						
Hel. Air Service	240,938	* * *	240,191	* * *	* * *	* * *	* * *	100,712	58,414	42,297	140,226
Los Angeles	90,883	* * *	89,597	* * *	* * *	* * *	* * *	90,013	44,067	45,946	870
					Figures for Wisconsin Central Not Previously Reported						
Wis. Cent. (Now)	162,933	70,250	90,480	1,524	* * *	450	* * *	185,461	89,824	95,637	-\$22,528
* Figures are preliminary.					# Figures include retroactive mail payments.						
** Figures cover local service segment awarded MCA by CAB in the Farces Air Lines investigation case.											

U. S. LOCAL SERVICE AIRLINE REVENUE AND EXPENSES FOR YEAR ENDING DEC. 31, 1952

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FRIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American*	\$ 3,857,936	\$ 1,839,762	\$ 1,875,361	\$ 62,770	\$. . .	\$ 6,634	\$ 59,121	\$ 3,731,212	\$ 1,791,444	\$ 1,941,768	\$ 124,724
Americana**	976,655	400,125	549,397	1,386	7,196	4,200	10,213	1,051,977	450,652	601,525	-75,322
Central	1,356,843	249,255	1,030,608	707	5,073	1,333	48,478	1,624,914	701,622	923,292	-268,071
Colt	1,075,608	407,654	607,310	8,305	2,141	45,634	1,041,257	556,305	484,952	34,350	24,350
Frontier	4,104,653	1,181,127	2,508,989	24,764	82,520	9,297	37,365	4,159,376	1,999,019	2,200,357	-54,723
Mid-Central	957,945	281,294	516,565	26,732	• • •	1,374	53,908	1,131,435	482,315	649,120	-173,490
Mid-Cont.	812,093	501,609	274,140	17,348	10,562	2,449	4,607	936,660	355,066	581,594	-124,567
Mid-West	401,056	19,854	380,904	• . .	• . .	97	79	380,188	156,911	223,277	20,868
Mid-Cont.	2,150,888	462,633	1,656,628	23,215	• . .	2,494	5,602	2,287,313	1,171,396	1,115,917	-336,425
Midwest	3,653,417	2,604,954	924,632	34,274	38,849	18,122	19,832	3,407,524	1,710,579	1,696,945	245,893
Mountain	3,601,892	2,287,053	1,080,986	20,072	56,331	18,224	78,348	3,365,944	1,521,730	1,844,214	235,948
Midwest	2,265,290	989,994	1,150,294	25,537	21,305	2,762	34,638	1,598,345	788,378	809,967	666,945
Southern	2,627,902	948,026	1,628,492	28,994	• . .	4,229	12,160	2,750,492	1,417,687	1,332,805	-122,590
Southwest	2,390,964	1,452,523	789,131	16,857	47,803	5,671	55,829	2,352,265	1,012,583	1,339,682	38,699
South-Texas	2,630,692	871,646	1,652,239	11,294	23,750	5,451	59,676	2,602,485	1,181,258	1,421,227	28,207
West Coast	1,355,988	640,262	651,084	6,017	15,100	2,309	32,292	1,171,867	504,070	667,797	184,121
West Central	344,052	23,382	314,679	1,298	• . .	62	3,477	304,965	122,168	182,797	39,087
West Central	2,097,607	860,598	1,181,596	45,173	• . .	5,261	382	2,108,061	980,487	1,127,574	-10,454
TOTALS	36,661,481	16,259,178	18,773,269	356,743	309,489	92,110	562,035	36,008,280	16,863,470	19,144,810	653,200
* Figures include retroactive mail revenues of \$236,597 applicable to period of July 1 to December 31, 1950.											
** Figures are preliminary.											
*** Figures cover local service segment awarded MCA by CAB in the Parks Air Lines Investigation Case. (route 106)											
All. Air Service*	511,673	• . .	510,801	• . .	• . .	• . .	• . .	398,728	240,295	158,432	112,947
Los Angeles	380,305	• . .	376,405	• . .	• . .	2,414	323,786	152,368	169,418	58,519	58,519

Scheduled Atlantic Cargo Rates Denied

CAB rules overseas Seaboard and Transocean routes would not be "commercially feasible."

THE CIVIL Aeronautics Board has refused to certificate all-cargo carriers in the trans-Atlantic field as was done several years ago in the domestic market. Acting on long-standing route applications of Seaboard & Western Airlines and Transocean Air Lines, the Board, with the approval of President Truman, ruled out proposed new services because:

- Public convenience and necessity do not now require trans-Atlantic all-cargo operators.

- Presently-certificated trans-Atlantic lines might be injured.

- The "delicate balance" in our civil aviation relations with foreign countries might be jeopardized.

- National defense arguments are not in themselves sufficient to warrant CAB authorization for lines which are "not commercially feasible."

Seaboard applied for a trans-Atlantic route in July, 1947; Transocean in April, 1949. Considered the international counterpart to the case in which Slick, Flying Tiger, U. S. Airlines, and Airnews were granted domestic all-cargo certificates, the proceeding went through public hearings in October, 1949.

In February, 1951, CAB, with four members voting, decided against the applications. But White House approval of the Board's action came only last week and the Board's decision accordingly was not made public until the President acted.

New Rates Proposed For Alaskan Carriers

A permanent mail rate program designed to put certificated Alaskan air carriers "on the road to economic stability and ultimate self-sufficiency," has been initiated by CAB. Touching off the program were show-cause orders to Pacific Northern Airlines and Cordova Air Service in which final rates were named for periods dating back to 1942 and new increased rates proposed for future operations.

PNA would get \$1,701,924 annually under the new proposal, as compared to \$650,000 last year. In back mail pay through December 31, 1951, the total amount, including payments already made, would be \$2,293,053. For Cordova, whose annual mail pay in the past has averaged \$35,000, CAB proposed future annual mail compensation of \$367,494.

Significantly, only two current Board members, Oswald Ryan and Josh Lee, took part in the decision, along with two ex-members, former chairman D. W. Rentzel and Harold A. Jones.

The two carriers had based many of their arguments on traffic to be generated from sharply reduced trans-Atlantic cargo rates. Granting to some extent that this might be the initial result, CAB concluded that the chain reaction of events would ultimately force the two lines out of business "unless subsidized by some means."

The Board also pointed out that "there is some question as to whether the operations proposed, if certificated, could be conducted pursuant to existing air transport agreements between the U. S. and foreign countries concerned."

On the national defense angle, the Board indicated that certificate authorization granted on that consideration alone as a matter of policy "could require an almost unlimited number of aircraft to be operated with great financial drain on the United States Treasury." CAB added that the military establishments are "primarily charged with anticipating the nation's needs in this regard."

Both Seaboard and Transocean are technically considered as "large irregular carriers." They will retain that status at least until CAB finally completes the pending over-all investigation of the large irregular industry.

Western Asks CAB Stand In State Court Action

Western Air Lines has asked CAB for an official determination of Western's status under the Act with respect to the California intra-state coach fare controversy. Thus far, CAB has kept out of the squabble, in which the California Public Utilities Commission seeks to inflict statutory penalties and to force airlines to make refunds where Los Angeles-San Francisco coach fares in CAB tariffs exceeded those in PUC tariffs during the period March 1-May 9, 1951.

With CAB inactive to date, all court decisions in the battle have upheld the California agency. Now Western is calling on CAB. Presumably, if Western makes refunds as directed by the PUC, it will be violating the Civil Aeronautics Act. It wants CAB to make its position clear with respect to such

possible violations. This could lead to an over-all reargument of the matter which the Supreme Court of the U. S. once refused to rule on "for the want of a substantial Federal question."

Capital Still Wants 5% Discount Dropped

Domestic certificated airlines have not given up on eliminating the 5% discount granted round-trip passengers. Though blocked in a formal attempt last month, Capital Airlines has asked CAB for immediate reconsideration of its previous action.

Capital cited a net loss of \$1,802,493 for the first quarter of 1952 and indicated that its ability to continue on a subsidy-free mail rate may be endangered by CAB refusal to grant elimination of the round-trip discount. Capital estimated that dropping the discount would mean additional annual revenues of \$669,432 on its system.

CAB Decisions

- Pan American World Airways' application to serve American Samoa as an intermediate between Canton Island and Suva on its U. S.-Australia route denied by 4-1 vote with Member Joseph P. Adams dissenting.

- Mid-Continent Airlines granted temporary exemption to serve various Mid-West Airlines' points following MWA termination of operations on May 15. Points are Norfolk, Nebr., Austin, Minn., and Yankton and Mitchell, S. D.

- Trans World Airlines' temporary trans-Atlantic mail pay cut from \$9 million annually to \$3,868,000 for year ending June 30, 1952, and to \$3,268,000 for each year thereafter.

- American Airlines "block ticket plan" investigation terminated without prejudice to renewal following discontinuance of the plan by American on May 1.

CAB Calendar

May 27—Hearing in Southern Airways Certificate Renewal Case. Birmingham, Ala. Docket 5199 et al.

June 2—Hearing in Capital-Northwest Merger Case. Washington. Docket 5396.

June 10—Hearing in Las Vegas-Los Angeles Restriction Case. Las Vegas, Nev. Docket 5219.

June 30—Hearing in Pioneer Air Lines Mail Rate Case. Washington. Docket 5499.

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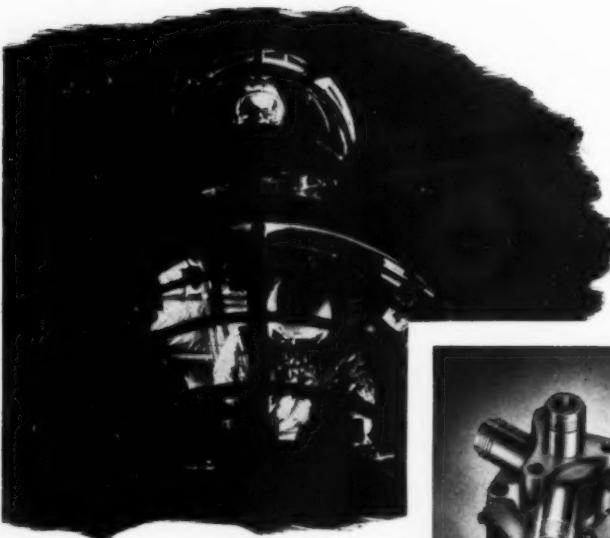
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1951 Airline Salaries

Following are 1951 airlines salaries as reported to CAB.

Trunk Carriers

National Airlines, Inc.

G. T. Baker, pres. and dir., \$30,000 salary, \$51,400.98 bonus and indirect compensation (up \$44,889.76); J. L. Morris, v.p., \$12,000 salary, \$20,560.40 bonus and indir. (up \$17,955.97); J. D. Crane, v.p. engineering, \$12,000 salary, \$20,560.40 bonus and indir. (up \$17,955.91); E. J. Kershaw, v.p. oper. and maint., \$16,000 salary, \$27,413.84 bonus and indir. (up \$23,941.19); Walter Sternberg, v.p. sales, \$20,000 salary (up \$2,063.48), \$30,634.13 bonus and indir. (up \$26,835.94); R. E. Wieland, v.p. foreign operations and dir. (term expired Sept. 27, 1951) \$9,000 salary, \$15,420.30 bonus and indir. (up \$13,466.92); J. M. Rosenthal, v.p. industrial relations, \$12,000 salary, \$20,560.40 bonus and indir. (up \$17,955.91); R. P. Foreman, secy. and dir., \$12,000 salary, \$20,560.40 bonus and indir. (up \$17,955.91); J. C. Brawner, treas. and dir., \$12,000 salary, \$20,560.40 bonus and indir. (up \$17,955.91); W. F. Johnson, asst. secy.-treas., \$8,400 salary (up \$1,350), \$11,553.46 bonus and indir. (up \$10,120.97).

United Air Lines, Inc.

W. A. Patterson, pres. and dir., \$75,000 salary (up \$2,971.54), \$7,209 bonus and indirect compensation; Otis E. Kline, exec. v.p. and dir., \$31,916.70 salary (up \$25,166.70), \$1,921.68 bonus and indir.; J. A. Herlihy, v.p. eng. and maint. and dir., \$45,666.72 salary (up \$3,105.34), \$3,624.70 bonus and indir.; D. F. Magarrell, v.p. transportation services, \$26,666.76 salary (up \$2,893.69), \$1,898.08 bonus and indir.; D. R. Petty, v.p. flight operations, \$26,250.02 salary, \$499.06 bonus and indir. (entered office Sept. 25, 1951); Harold Crary, v.p. sales, \$20,666.64 salary (up \$605.32), \$3,428.50 bonus and indir.; Hal E. Nourse, v.p. economic controls, \$20,666.64 salary (up \$1,136), \$6,609.13 bonus and indir.; R. F. Ahrens, v.p. personnel, \$20,666.64 salary (up \$1,143.67), \$1,653.70 bonus and indir.; R. W. Ireland, v.p. traffic administration, \$21,679.20 salary (down \$820.80), \$2,885.06 bonus and indir.; Curtis Barkes, v.p. finance and property, \$20,666.72 salary (up \$3,526.44), \$1,450.50 bonus and indir.; R. E. Johnson, v.p. and asst. to pres., \$14,467.06 salary, \$905.13 bonus and indir. (entered office April 10, 1951); S. P. Martin, secy. and asst. to pres., \$12,900.16 salary (up \$509.69), \$909.90 bonus and indir.; C. H. Blanchard, comptroller, \$14,400 salary (up \$1,750), \$750.81 bonus and indir.; A. M. de Voursney, treas., \$10,480.08 salary (up \$7,146.72), \$505.62 bonus and indir.

NOTE: Bonus and indirect compensation represents company contribution toward Retirement Plan and Group Life Insurance Plan.

Western Air Lines, Inc.

T. C. Drinkwater, pres. and dir., \$35,729 salary (up \$729), \$450 bonus and indirect compensation; S. R. Shatto, v.p. operations and dir., \$20,416 salary (up \$2,666.08), \$450 bonus and indir.; M. W. Landes, v.p. service and dir., \$15,312 salary (up \$2,562), \$450 bonus and indir.; A. F. Kelly, v.p. sales, \$15,312 salary (up \$2,562); P. E. Sullivan, v.p. and

secy., \$15,312 salary (up \$2,562); J. J. Taylor, treas., \$15,312 salary (up \$2,562); D. P. Renda, asst. secy. \$13,270 salary (up \$2,520); Charles J. J. Cox, comptroller and asst. treas., \$5,852 salary; R. H. Purcell, comptroller and asst. treas., \$2,625 salary (down \$5,925—deceased).

Local Service Carriers

All American Airways, Inc.

Robert M. Love, pres. and dir., \$15,000 salary; C. W. Wendt, v.p. and treas., \$11,666 salary (up \$1,666); D. L. Miller, v.p. and dir., \$8,000 salary (up \$500); C. H. McIntosh, v.p. operations, \$10,500 salary (up \$500); W. J. Short, asst. treas., \$6,900 salary (up \$300); H. G. Kenyon, asst. secy., \$5,850 salary (up \$150); E. K. Arnold, secy., \$5,700 salary (up \$400).

Bonanza Air Lines, Inc.

Edmund Converse, pres. and dir., \$12,000 salary; Wesley Durston, v.p. and dir., no salary; Florence J. Murphy, secy.-treas. and dir., \$6,625 salary (up \$475); Earl Jochim, asst. treas., \$5,887 salary (up \$337); M. E. Cole, v.p. traffic, \$9,223 salary (up \$1,123); Myron Reynolds, v.p. operations, \$9,465 salary.

Central Airlines, Inc.

Keith Kahle, pres., \$12,000 salary (up \$2,225); R. E. Harding, Jr., v.p., \$10,800 salary (up \$2,750); Donald B. Ehrhart, v.p. and secy., \$9,000 salary (up \$2,100); Marshall Gibbons, treas., \$6,000 salary (up \$1,400); F. Kirk Johnson, dir., \$1,200 salary (down \$750).

Frontier Airlines, Inc.

H. S. Darr, pres. and dir., \$24,000 salary (up \$10,000); C. A. Myhre, exec. v.p. treas. and dir., \$10,416.50 salary (up \$4,583.18); R. M. Wilson, v.p. operations and dir., \$9,999.84 salary (up \$4,166.52); D. A. Dunn, v.p. traffic and dir., \$9,999.84 salary (up \$4,166.52); E. N. Levin, secy. and dir., no salary; D. T. Myers, asst. secy., \$1,859.40 salary (up \$464.40); E. W. Sexton, asst. treas., \$4,350 salary (up \$2,000).

NOTE: Operations began June 1, 1950.

Lake Central Airlines, Inc.

Roscoe Turner, pres. and dir., \$10,200 salary (up \$1,200); John V. Weesner, exec. v.p. and dir., \$12,000 salary (up \$2,000); Robert W. Clifford, v.p. operations, \$10,000 salary (up \$1,000); William W. Weesner, secy. and dir., \$7,200 salary; Lloyd W. Hartman, treas., \$7,200 salary.

Ozark Air Lines, Inc.

B. T. Mattingly, chm. of board, no salary, \$1,380 bonus and indirect compensation; Laddie Hamilton, pres. and dir., \$12,250 salary (up \$7,250), \$180 bonus and indir.; A. G. Heyne, secy. and dir., no salary, \$1,980 bonus and indir.; F. W. Jones, treas. and dir., \$7,200 salary (up \$4,200), \$80 bonus and indir.; G. O. Shaver, dir., \$8,581.65 salary (up \$6,681.65), \$140 bonus and indir.; J. B. Carl, v.p. and dir., \$3,600 salary (down \$400), \$120 bonus and indir.; C. W. France, v.p. and dir., \$6,250 salary, \$2,638.61 bonus and indir.

NOTE: Operations began Sept. 26, 1950.

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Piedmont Aviation, Inc.

T. H. Davis, pres., treas. and dir., \$15,000 salary (up \$2,750); **R. D. Hager**, v.p., asst. to pres. and dir., \$11,000 salary (up \$916.68); **R. S. Northington**, v.p. and dir., \$6,000 salary (up \$600); **M. F. Fare**, secy. and dir., \$6,175 salary (up \$900).

Robinson Airlines Corp.

E. V. Underwood, pres. and dir., no salary; **Robert E. Peach**, exec. v.p., \$12,000 salary (up \$1,833.32); **John R. Carver**, v.p. and secy., \$8,499.90 salary (up \$1,233.24); **C. A. Benscooter**, v.p. operations, \$10,500 salary; **W. D. Bosworth**, treas., no salary; **H. S. Goldsmith**, asst. treas., \$5,600 salary; **W. J. Fields**, asst. treas., no salary; **A. W. Worthen**, asst. secy., no salary; **Bertram J. Miner**, chairman of board, no salary; **L. N. Simmons**, dir. and general counsel, \$300 salary (up \$300).

Southern Airways, Inc.

Frank H. Hulse, pres. and dir., \$11,333.21 salary (up \$2,503.53); **Tom D. Eve**, v.p., \$3,885 salary (down \$5,187.96); **Ike F. Jones**, v.p. and dir., no salary; **George F. Estey**, secy. and treas., \$9,240 salary (up \$516.45); **W. B. White, Jr.**, asst. secy., no salary; **Hugh W. Davis**, v.p. operations, \$10,080 salary; **Cecil A. Beasley**, asst. secy. and dir., \$25 salary.

Trans-Texas Airways

R. E. McKaughan, pres. and dir., \$22,498.08 salary, \$110 bonus and indirect compensation; **H. E. Erdmann**, v.p. and dir., \$10,766.67 salary (up \$766.59), \$210 bonus and indir.; **M. L. Muse**, secy.-treas., \$7,150 salary (up \$1,150), \$210 bonus and indir.; **W. C. Leatherwood**, dir., \$5,200 salary (up \$5,200), \$210 bonus and indir.

West Coast Airlines, Inc.

Nick Bez, pres., \$6,000 salary; **H. A. Munter**, v.p. and dir., \$14,000 salary (up \$1,500); **William Calvert**, v.p. and dir., no salary; **R. A. Duwe**, secy.-treas. and dir., \$7,800 salary (up \$300); **James W. Johnston**, asst. secy., no salary.

Wisconsin Central Airlines, Inc.

Francis M. Higgins, pres., \$12,000 salary; **Harold N. Carr**, exec. v.p., \$10,601.62 salary (up \$101.62); **Delmar G. Hendrickson**, v.p. operations and maintenance, \$9,138.38 salary; **Frank N. Buttemer**, v.p. traffic and sales, \$7,800 salary; **Arthur E. Schwant**, secy.-treas., \$7,310.68 salary (up \$110.68); **Bernard Sweet**, asst. treas., \$4,716.85 salary.

Helicopter Mail Service

Helicopter Air Service, Inc.

T. H. Reidy, pres., treas., and dir., \$12,000 salary, \$3,000 bonus and indirect compensation; **C. W. Moore**, v.p. operations, \$8,700 salary (up \$850); **C. E. Cessna**, secy. and dir., no salary; **R. B. Kiel**, asst. secy.-treas., \$6,300 salary (up \$795.02).

Los Angeles Airways, Inc.

C. M. Bellin, pres. and dir., \$16,125 salary (up \$1,125); **Martin J. Burke**, secy. and dir., no salary; **Wayne H. Fisher**, treas. and dir., no salary.

Metal Shortage Eases

FOR THE FIRST time, a sufficient amount of controlled materials—steel, copper and aluminum—has been allocated for airport construction by the Defense Materials Procurement Agency. For the third calendar quarter building period, beginning July 1, all underway projects, as listed with the CAA's Airports Requirements Division, will be continued and some new programs started.

Major bottleneck, outside of the material situation, has been a laxity on the part of the project owners to register their "A" product needs by deadline time, Louis A. Palmer, division chief, disclosed. Applications for materials should be made three to four months prior to the beginning of a building period. In some instances, latecomers have been taken care of by the return of controlled materials from projects that had overestimated but the late arrivals nevertheless cause delays, scramblings, and disappointments.

Most serious shortage has been a lack of structural steel. In making the allotments, the DMPA allows a certain percentage of the overall steel tonnage to be used for structural purposes. In the fourth quarter of 1951, 35 projects had to be deferred, since out of the small total of 5,849 tons of general steel, only 979 tons could be used as structural. This cleared up somewhat in the first two building periods in 1952, but there still wasn't enough to go around. During the third quarter, however, 7,920 tons of a 24,700-ton allotment can be used for structural steel.

Whole picture can, of course, be dimmed by the current steel industry situation. If this is cleared up in a short time, however, Palmer does not anticipate any difficulties.

Copper problem is worrisome. To preserve the supply as long as possible, DMPA has put restriction on the use of copper in all but essential uses. This applies to aluminum, also. Neither material can be used for any ornamental or decorative purposes.

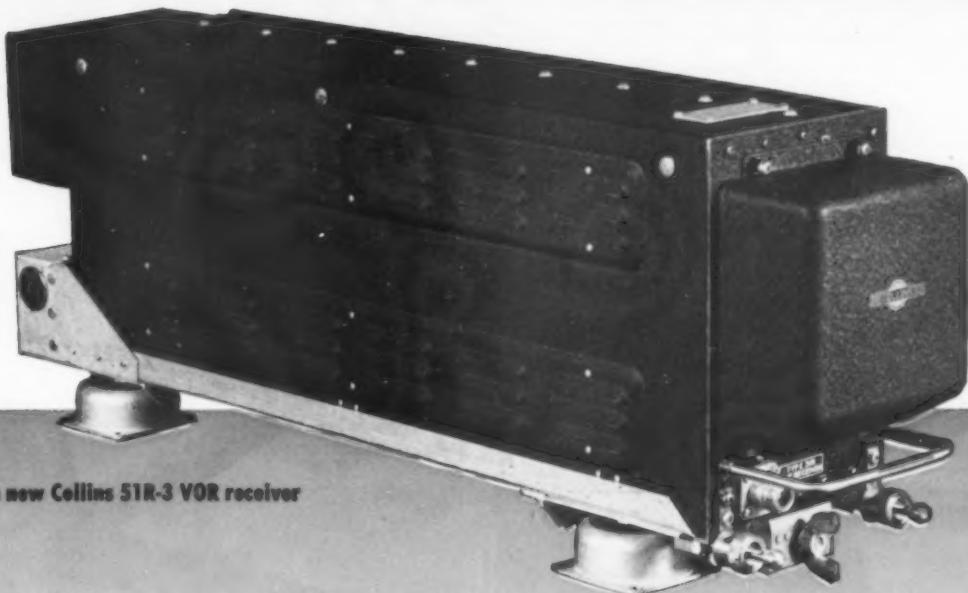
Copper, though currently available in sufficient quantities for "absolute-necessity" building, may not continue to be, since the loss of some world markets has not yet been compensated for. The fact that airports can substitute "B" for "A" products in many situations has helped reserve the supply for such essentials as lighting and tower uses. At the moment, the Airports Requirements Division has received a promise of 1,081,000 pounds, although this does not guarantee delivery.

In the South, a supplier was not able to provide the copper wiring needed for runway lighting, despite the allotment. Until a sufficient amount was located, the construction of an entire terminal building, to be built on an old runway, was held up pending the lighting of the new strip.

Regional shortages have cropped up, usually in areas where the military, receiving priority for installation construction, has used up all the local supplier's materials. Military has been cooperative in helping to locate new sources of supplies or in lending any equipment that was not immediately needed. With this kind of interchange, delays may be experienced by project owners, but they are only temporary.

Should the materials situation take a turn for the worse a priority system has been set up. Defense needs, naturally, will come first; underway projects, regardless of airport class will, take second place. Large new projects come next, followed by unannounced and small field construction.

The material situation has been lightened, but the Federal Aid to Airports situation is darkening. After suffering a 17% cut in appropriations in 1951, the airport construction projects are taking a worse blow in 1952, with only \$15,030,607 being set aside for that purpose. The figure promises to be even lower in 1953, since the President's budget asks only \$14,675,000. This could very well affect future building, even with materials more readily to be had.



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Within a year, orders for 51R equipment were received from American, Chicago & Southern, Northwest, Pan American and United. Since then almost every leading airline of the United States (and, most recently, Air France), as well as many users of executive aircraft, have adopted the 51R as standard.

Collins has earned and is widely accorded the leadership in the VOR field and today, by a wide margin, is the largest producer of airborne VOR receivers and accessories.

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Production Spotlight



New Flight Photographs of the Convair YB-60 (left) and the Boeing YB-52 eight-jet intercontinental bombers show the degree of sweep of the wings. Although no figures were released by the Air Force, measurements show both planes



are swept back about 35 degrees. The YB-60, with a wing span of 206 feet, a fuselage length of 171 feet, and a tail height of 50 feet, is slightly larger than the Stratofortress. The YB-52 has a 152-foot span, a length of 153 feet, and a tail height of 48 feet.

New Commission to Advise on Production

A NEW Production Policy Advisory Commission destined to become the dominant government production planning group has been created by the Defense Department and the Office of Defense Mobilization. This seven-member commission is expected to become a super Munitions Board, taking over and augmenting many of the present Munitions Board's powers.

The carefully worded release announcing the Commission's creation said the members would advise the Defense Department and the ODM on long-range production programs, current schedules, and various steps required to overcome bottlenecks. It will also have the power to "recommend" policy changes where it feels them necessary.

Only members chosen so far are Harold Vance, board chairman and president of Studebaker Corp., as chairman, and Clay P. Bedford, former DPA deputy administrator for production and special assistant for production to Defense Secretary Lovett. Executive secretary of the group will be Charles Stauffacher, ODM staff director, Harry Vollmer, former vice president-production for The Glenn L. Martin Co., who is now Lovett's machine tool advisor, will hold a similar post.

The Commission will not meet in

permanent session, since the two members chosen and the others still to be named will probably be executives of major manufacturing firms.

Federal Mediation Due On GE Jet Plant Issues

Attempts to avert a possible walkout at General Electric Co.'s jet engine plant at Lockland, Ohio, were to be made in Washington where Mediation Chief Cyrus Ching invited GE representatives and spokesmen for IAM-AFL and UAW-CIO to meet.

The Machinists' pact expired March 13, while the Autoworkers contract for the remaining 8,000 employees ended two days later.

GE would not give in on the unions' demand for a union shop and an "unwarranted" wage increase that would be "inexcusably higher than wage scales for similar work on non-aircraft products."

Bedford Named to Head Chase Aircraft

Shortly after leaving his post as Defense Secretary Lovett's assistant for production, Clay P. Bedford, Kaiser-Frazer Corp.'s former executive vice president, returned to K-F and was im-

mediately named president of Chase Aircraft Co., which is 49% owned by K-F. He replaced Chase president Edgar F. Kaiser (also head of K-F), who remained a member of the Chase board of directors.

Meanwhile Chase was preparing to start production of its C-123 assault transport at the K-F Willow Run factory in Ypsilanti, Mich., next month.

Another deal in which K-F was interested, the proposed merger with Consolidated Vultee and Atlas Corp., seems to have encountered some unexpected snags and consummation appears unlikely for the present.

Large Orders in for Three Versions of H-21

Piasecki Helicopter Corp. has been awarded large-scale production orders for three different versions of its big H-21 transport helicopter. In addition to the H-21A rescue version and the H-21B assault version for the USAF, Piasecki will also build the H-21C as an Army troop carrier and resupply vehicle.

All versions of the "Work Horse" are to be powered by the Wright R-1820-103 Cyclone 9 engine, rated at 1,150 and 1,425 horsepower in the rescue and transport types, respectively. Its 20-foot-long cabin will permit 12 litters and two attendants for rescue.

BOEDY'S ALBUM

1948



A. J. ("Art") Gray
Eastern Air Lines
Newark-Miami
July 7, 1948



Suzanne Pelsang
Delta Air Lines
Miami, Florida
July 8, 1948



L. G. ("Swede") Larson
Gulf Oil Corp.
at Miami, Florida
July 8, 1948



Suzanne Pelsang
Delta Air Lines
Miami, Florida
July 9, 1948



H. S. ("Hank") Houghton
Eastern Air Lines
Miami, Florida
July 9, 1948



Roy L. Harshbarger
Civil Aeronautics Admin.
Miami, Florida
July 9, 1948



Stanis Van Meensel
Civil Aeronautics Admin.
Miami, Florida
July 9, 1948



Kay Christopherson
Delta Air Lines
Miami-Atlanta
July 12, 1948



W. J. ("Bill") Mile
Eastern Air Lines
Atlanta-Newark
July 13, 1948



Irene J. Keller
Wright Aeronautical Corp.
Wood-Ridge, N. J.
July 14, 1948



Norma C. Martin
Wright Aeronautical Corp.
Wood-Ridge, N. J.
July 14, 1948



Henry ("Bud") Berlinghof
Wright Aeronautical Corp.
Wood-Ridge, N. J.
July 14, 1948



Irene H. Procalo
Wright Aeronautical Corp.
Wood-Ridge, N. J.
July 14, 1948



A. E. ("Andy") Mueller
Curtiss-Wright Corp.
at Idlewild Airport
August 2, 1948



George W. Farrow
C-W Propellers
at Idlewild Airport
August 2, 1948



Warren R. Williams
C-W Propellers
at Idlewild Airport
August 2, 1948

BOEDY'S ALBUM



George W. McCauley (QB)
Aeronautical Radio Mfg.
at QB Dinner, New York
August 2, 1948



H. ('Monk') Russell
United States Navy
at QB Dinner, New York
August 2, 1948



M. J. ('Mike') Fabia (QB)
New York Police Dept.
at QB Dinner, New York
August 2, 1948



E. L. ('Ed') Smith (QB)
Hunter College, New York
at New York QB Hanger
August 2, 1948



Garnet N. Hughes (QB)
Leech Aircraft, Inc.
New York, N. Y.
August 2, 1948



Floyd W. Carlson (QB)
Bell Aircraft Corp.
at QB Dinner, New York
August 2, 1948



J. W. ('Robbie') Robinson
United States Navy
at Floyd Bennett Field
August 4, 1948



Elinor Patterson
(Mrs. A. L. 'Pat')
at Floyd Bennett Field
August 4, 1948



Jack Randle
United States Navy
at Floyd Bennett Field
August 4, 1948



John L. Tower
Lockheed Aircraft
at Floyd Bennett Field
August 4, 1948



George W. Tompkins
United States Navy
at Floyd Bennett Field
August 4, 1948



W. C. ('Bill') Jordan
Wright Aeronautical Corp.
Wood-Ridge, N. J.
August 11, 1948



E. W. ('Ed') Kilgore (QB)
U. S. Air Force
at Wood Ridge, N. J.
August 11, 1948



Adeline DeRenzo
Wright Aeronautical Corp.
Wood-Ridge, N. J.
August 19, 1948



Kathryn A. Matkowsky
Trans World Airlines
New York-Kansas City
August 31, 1948



Mary Alice Hipp
Trans World Airlines
New York-Kansas City
August 31, 1948

British Pilots Lured Off By Cash, Briton Fears

British European Airways and British Overseas Airways Corp. are in danger of losing their pilots to competitive foreign carriers offering double the salaries paid by the British lines, according to an article in *The Log*, official journal of the British Air Line Pilots Association, by Capt. A. Spooner, chairman of a local council.

In response to a SABENA ad in the journal, according to Capt. Spooner, over 700 applications were received, many from captains and first officers of BEA and BOAC.

"Britain must recognize," Capt. Spooner states, "that British pilots, due to their salary level and to high proportionate income tax demands, probably live at a lower standard of living than do pilots elsewhere. British airlines are in no position to face the loss of even a dozen pilots."

Capt. Spooner suggests that the remedy to "this embarrassing situation created by SABENA" would be, first, for BEA and BOAC to redistribute income so that British pilots can be paid on a scale comparable with those of foreign competitors, and secondly, for income tax authorities to recognize that pilots, because of medical reasons beyond control, compress their earning power into about 20 years.

Survey Europe's Presses

A team of experts on heavy presses from the USAF, NPA, and DPA is in Europe to try to line up manufacturers there who might be able to produce 69 separate castings for the heavy press program.

The steel castings range from 50 to 150 tons and a preliminary survey showed several French and German companies might be able to handle the job.

Standard Oil Booklet Aids Western Flyers

Complete information on location of airports and types of fuels available on cross-country hops in seven Western states and Alaska is provided in the 1952 Directory of Standard Airport Dealers, prepared by the Standard Oil Company of California.

Now being distributed to 10,000 aircraft owners in the areas included, the book is also available to eastern and middle western aircraft owners who might be planning to fly to the Pacific coast.

the bulletin board

Undisplayed Advertising: \$1.00 per line, minimum charge \$4.00. Cash with order. Estimate 30 capital letters and spaces per line; 40 small lower-case letters and spaces per line. Add two lines if Box Number is included in lieu of advertiser's name and address.

Displayed Advertising: \$10.00 per inch for less than 15 inches in one issue or in any 12-month period. For more than 15 inches, \$8.50 per inch; more than 30 inches, \$8.00; more than 60 inches, \$7.50; more than 90 inches, \$7.00; more than 120 inches, \$6.50. Space units up to full pages accepted in this section for classified-type advertising.

Forms close 20 days preceding publication date. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Ave., N. W., Washington 5, D. C.

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Caracas. You'll get a surprise when you go to Caracas, capital of Venezuela. It's booming and it's building and it's on the way to becoming one of the most super-modern cities of the world. It's unlike anything else in South America except for Brazil's Sao Paulo.

Twenty-five years ago Caracas was a small, sleepy, unhealthy Spanish town nestled 3,000 feet high in the mountains and pretty difficult to reach. Today it is tearing out blocks of old houses and business buildings to create broad avenues, all new buildings are ultra-modern in design, and the population of 600,000 continues to grow.

The airport for Caracas is at Maiquetia along the Caribbean coast. To get into town is an hour and a quarter's drive up and over the mountains, one of the dizzies and most hazardous rides in the world. But it won't be long now, sometime late next year, when you'll be whisked to the city in 20 minutes via a six-lane highway that tunnels through the mountains. The project is costing something like \$40,000,000, but that seems to be nothing for oil-rich and iron-ore-rich Venezuela.

+ + +

New Buildings. A big new hotel spectacularly situated at the far east end of Caracas, called the Tamanaco, is to be finished also by the end of next year. It will have a swimming pool and all the trimmings of a resort hotel. It's needed, because Caracas always seems short of rooms, but for myself I'll stick to the Avila, as nice a hotel as you can find in the world.

There's a bustle at Maiquetia, too. The terminal is being expanded greatly and a new instrument runway has just been opened. Maiquetia is, without much fear of contradiction, the noisiest terminal in the world but when the expansion is completed maybe it'll be better. The loudspeaker system is terrible and confusion reigns supreme, but Maiquetia has something other airports will envy—a manager who is extremely helpful to airlines and passengers: Major Julio Carreno, military commander of the airport and as fine a gent as ever lived. There is no night flying at Maiquetia, due to the poor approach, but from morning until dark there are an average of 200 movements per day.

+ + +

Toot and Pay. Caracas is the world's most silent city. You'll get fined \$90 or more if you sound your horn. The law is strictly enforced . . . Everywhere you turn you see "Fuentes de Soda" signs which simply means soda fountain but you can buy anything from ice cream to whiskey . . . Caracas has as many

neon lights as any U. S. city . . . but prices are high because the U. S. dollar is a depreciated currency there. For example a scoop of ice cream costs 45¢ at one place—about a dime's worth in the U. S. . . . Every house in Caracas has a name, usually a feminine one—but no house number. Not even office buildings are numbered . . . One of the biggest new neon signs advertises Pan American, which has several floors in a smart modern building in a fine location. . . . One of the best ice creams is Guanabana, made from a tropical fruit resembling the delicate chiramoya found in Peru.

Sid Stewart, president of Chicago & Southern, threw a big cocktail party at the Valle Arriba golf club and just about everybody of any importance was there, including many airline folk. . . . The golf club is beautifully located and maintained and has a super-fine swimming pool. . . . Agent for C&S at Venezuela is the Agencia Candes, S. A., owned by two very fine young chaps by name of Alan Kipping and Dick Gluski. Had many fine times with them. . . . Caracas is very modern, so it lacks the atmosphere of an old town. Its night clubs are the same as everywhere else—brassy, noisy and more brassy. The Pasa Pogo is a good example, where noise seems to count for more than anything else.

+ + +

Oil Town. I flew on Avensa with Stewart and Delta's C. E. Woolman to Barcelona in eastern Venezuela and then south for lunch at the Mene Grande Oil Co. camp at San Tome. Mene Grande is owned by Gulf Refining. Quite a boom area with some 1,400 wells on a rather dry and barren plain. Nearby is a boom town called El Tigre, not exactly a garden spot, with brand new refrigerators, radios, etc., sitting on dirt floors of poor houses.

Outside of town was a house of doubtful evening pleasure with a big sign reading "Cada Minuto Una," meaning 'one a minute' and you can use your own imagination about this.

On south of San Tome on the Orinoco River, 200 miles up from the ocean, is Ciudad Bolivar, a very nice and clean little city of perhaps 50,000, totally unlike what I had expected to find. Instead of a typical South American jungle town, it was bright and clean, and quite a trading area, good paved streets, fine homes, strong electric current (instead of the weak current so often found), New Coke and Pepsi plants, new automobiles and bright gas stations.

+ + +

Moon over Orinoco. Ciudad Bolivar, meaning City of Bolivar, was

originally called Angostura and was where the great Latin Liberator Simon Bolivar began his march across the jungles and mountains to liberate Colombia. Bolivar held his first Congress in Venezuela at this spot. The Orinoco has a range of 40 feet here, requiring extensive dock works which float with the rise of the river. The town has a fine drive along the river and with a full moon it was quite an entrancing tropical sight. Houses in the city are painted in pastel shades. Lots of flowers are to be found. I noted with pleasure the absence of mosquitos.

We stayed at the Orinoco Mining Co. (U. S. Steel subsidiary) camp outside the city. Fine accommodations and good mess hall food except that you have to get up at dawn to get breakfast—the mess hall closes at 6:30 a.m.! The big iron ore mountain—Cerro Bolivar—which OMC is going to tap for ore is about 60 miles south of the city. A 90-mile railroad is being built to take the ore to a river point for transfer to ships. Cerro Bolivar is just a huge hunk of mountain on the plains containing an estimated 400,000,000 tons of high grade iron ore and I reckon it'll be a while before all this mountain is shipped up to the U. S.

+ + +

No Stripping. As in so many parts of the world, the dogs barked all night long in Ciudad Bolivar . . . in the OMC mess hall was a sign stating that men must not strip to the waist at mealtimes; seems that some lady workers have arrived so the guys have got to put up with the heat or else . . . truth of the matter is that it isn't so awfully hot near the Equator; it can be much more uncomfortable in Washington and New York during hot spells . . . One nice thing about those dense green jungle forests, they are spotted with bright yellow and pink blossoms and make a nice sight from the air.

The U. S. oil companies have built hundreds of miles of fine roads in Venezuela and turned them over to the government. Then the government began enforcing a 27 m.p.h. speed law and the fines are pretty terrific. The cops began hiding behind scrub trees along the road so the oil companies cleaned out all shrubbery and trees for a hundred feet back from each side of the roads. Fining motorists is a form of local graft—the roads could easily stand a 70 m.p.h. limit.

+ + +

Fly Sheecargo. Chicago & Southern Air Lines is pretty tough for a Venezuelan to pronounce, so the airline is known throughout the area simply as "Chicago". . . . C & S, incidentally, is doing very well on cargo, not only because of a speed advantage, but because limited harbor facilities over the mountain from Caracas makes it simpler and often cheaper to ship by air instead of by sea . . . The airline Avensa has about the most attractive DC-3 interior I've ever seen. All of the work was done in Costa Rica. The color scheme is brown in various shades . . . C & S certainly has some attractive and very capable stewardesses among whom are Norma Webb and Dodie Sturkes . . . and I enjoyed flying with veteran Capt. Charlie Quinn and Capt. Pat Gossett.

Around the World

Canada Drop Aircraft Tariff

A cut of more than \$1,000 in the prices Canadians pay for some U.S.-built lightplanes has resulted from recent removal of the Dominion's 15% customs tariff on import of planes and engines of "types and sizes not made in Canada." New provision remains in effect until July 1, 1955. Nearly all U.S. transport planes and engines qualify for customs-free entry.

Elimination of the tariff, together with the new parity of the Canadian with the U.S. dollar, results in substantial reductions. A year ago, a plane selling for \$7,000 in the U.S. cost \$7,700 in lower-valued Canadian dollars. The customs tariff raised this to \$8,855, and the 8% sales tax (now 10%) boosted the total price to \$9,563. Today, only the sales tax applies, and the price differential is a straight 10%, or \$700.

Philippine Line Branches Out

Philippine Air Lines plans to invest in an unidentified Mexican airline, which in turn will buy about 10% of PAL's stock, in a move to extend PAL around the world, according to reports from Manila. President Elpidio Quirino of the Philippines said that activities now underway on the part of PAL's management could result in the airline "girdling the globe in a few months." PAL has not commented on the President's statement.

Britain Names New Aviation Head

Alan Lennox-Boyd has been named British Minister of Civil Aviation, succeeding John Maclay, who resigned because of illness. Lennox-Boyd, who has been Minister of State for Colonial Affairs, was Parliamentary Secretary to the Ministry of Civil Aviation in Churchill's wartime cabinet, and during the tenure of the Labor government was a leading spokesman on aviation matters for the Conservative party.

BOAC Shows First Profit

British Overseas Airways Corporation showed a \$750,000 overall profit, the first in its history, for the fiscal year ended March 31. The profit contrasted with net loss of \$12,782,000 in fiscal 1951 and deficit of \$21,817,600 in fiscal 1950.

It was also revealed that under a new mail pay method, BOAC is to receive from \$2.12 to \$2.84 per long ton-mile for carrying first-class British mail. This is the highest rate ever granted. Range in 1951 was \$1.37 to \$1.98. Agreed rate for the carrying of foreign mail remains at \$3.19 per long ton-mile.

TRANSPORT

Trans Australia Airlines has ordered five Vickers Viscount turboprop transports from Vickers-Armstrongs Ltd. Planes will carry from 40 to 53 passengers and will be powered with Rolls Royce Dart gas turbines geared to propellers. Cruising speed is said to be 338 mph.

European practice of not charging airline pas-

sengers for surface transportation to and from airports has been abandoned in Scandinavia and will be dropped in some other European countries, at least with regard to tourist class passengers, it is learned. Charges now in effect in Sweden, Norway, and Denmark apply to all.

Dr. Eurico Arnaldo Guedes de Araujo has been named general manager of Panair do Brasil. Dr. Paulo Sampaio, president, has been acting as general manager in addition to his own duties for the past two years.

Varig, Brazilian airline, is now operating a C-46 equipped with two Turbomeca Palas auxiliary turbojets. Installation was made in Italy under supervision of SNCASO.

TAI, independent French carrier, operated the first official flight with a SE 2010 Armagnac between Paris and Casablanca (see photo, page 19).

KLM Royal Dutch Airlines on June 23 starts a new DC-4 all-cargo flight between Amsterdam and Johannesburg via Rome, Tripoli, Kano, Brazzaville, and Livingstone.

Flugfelag Islands, Icelandic airline, will inaugurate fortnightly DC-4 service between Reykjavik and Oslo on May 30.

Tasman Empire Airways will increase passenger fares 20% and cargo rates 10% to bring them into line with Australian carriers, who recently hiked tariffs.

MANUFACTURING

de Havilland Aircraft of South Africa has decided not to undertake major overhaul of Ghost engines used in BOAC's Comets on London-Johannesburg route. Instead, one or two spare engines will be "cocooned" and held in reserve in Johannesburg.

Scottish Aviation Ltd. is considering modification of the Prestwick Pioneer for installation of twin engines, probably Alvis Leonides, and a boost in seating capacity from nine to 12. Scottish Aviation built the plane originally as a military communications aircraft and later adapted it to civil use.

Armstrong Siddeley Motors Ltd. is negotiating with Piaggio, Italian plane and engine maker, for production under license of British jet engines, probably the Viper initially and the Sapphire later. First de Havilland Ghost jets built under license in Italy by Fiat are not at the test-bed stage. Alfa Romeo's Pomigliano plant near Naples is tooling up for Ghost production. Main Swiss production of this engine will be at Sulzer's plant at Oberwinterthur.

Alfa Romeo, of Italy, has received a contract from de Havilland to build 500 Gipsy Queen 30 engines under license.

Salmon, French engine firm, has been awarded a government development contract for its 8AS06 engine and the 9NH helicopter engine.

Flug and Fahrzeugwerke, Swiss firms, will start production of a Swiss-designed fighter as soon as present contracts to build de Havilland Vampires and Venoms under license are completed.

News At Deadline

NWA Stockholders Kill Merger With Capital

In a surprise move, Northwest Airlines' stockholders on May 19 defeated a management proposal to merge the company with Capital Airlines. Capital stockholders on the same day voted overwhelmingly in favor of the merger.

The NWA vote was 716,835 for the deal, and 167,995 against. Two-thirds of the outstanding stock, or 803,802, was needed for approval. The Capital vote was 612,367 for, and 12,936 against. Approximately 520,000 were needed for approval.

Colonial Merger Offer Renewed By Eastern

A renewed offer by Eastern Air Lines to acquire assets of Colonial Airlines through merger or purchase has been authorized by the EAL directors. If necessary, the offer will be submitted directly to Colonial's stockholders, EAL said.

EAL's previous merger offer was made to Colonial's management on Nov. 26, 1951, but was never submitted to Colonial's stockholders. These stockholders recently voted down a management proposal to sell the company's assets to National Airlines.

Meanwhile, another investigation to determine why National Airlines and Colonial Airlines should not merge has been started by CAB.

President's Commission Offers 25-Point Plan

A 25-point program for airport safety actions by appropriate government agencies has been submitted by the Presidents' Airport Commission, headed by Lt. Gen. James H. Doolittle.

Important recommendations included:

- Minimum ceilings and visibilities under which planes are permitted to circle or maneuver under the overcast in congested terminal areas should be raised. Present straight-in instrument approach minimums are considered satisfactory.

- Civil Aeronautics Act should be amended to require certification of airports necessary for interstate commerce and to specify conditions under which airports so certified shall be operated.

- Dominant runways of new airport projects should be protected by cleared extensions at each end of at least one half mile in length and 1,000 feet in width.

• Every flight crew should be required to have frequent drills in instrument and emergency procedures. "This can be accomplished in part in flight simulators . . . located at convenient points and available to all operators on a fair basis.

Other recommendations included: clarify laws and rules governing use of airspace; maintain positive air traffic control in areas of high traffic density regardless of weather; define navigable airspace in approach zones; further develop and use cross-wind landing gear; extend use of single or parallel runway system; revise and liberalize present cross-wind component limits; bring runway lengths up to established standards.

Also, accelerate ground noise programs; instruct flight personnel concerning nuisance factors; step up installation of air navigation aids; arrange flight patterns to reduce ground noises; minimize training and test flights near metropolitan areas and congested airports; and separate military and civil flying at these airports.

Develop helicopters for inter-airport shuttle services and short-haul use; establish effective zoning laws; expand the Federal aid to airports program; and integrate municipal and airport planning.

Fokker Mock-Up of Local Service Aircraft Ready

A full-scale mock-up of a transport which generally meets requirements of U.S. local service lines has been completed by Royal Dutch Aircraft Factories Fokker at Amsterdam, T. H. Davis, president of Piedmont Airlines, told a Senate Committee.

The Fokker Model 27, he said, is a high-wing, turboprop-powered, 28-passenger plane, and is being considered as a replacement for the DC-3 now being used by local service lines. Fokker is also willing to produce the plane with piston engines if the purchaser prefers them. Because of low labor costs, the Dutch firm could probably build the plane at about half the cost of a comparable U.S.-built craft, if it were not subjected to high tariffs, he added.

Air Races Off Till '53

The 1952 National Air Races, previously scheduled for Detroit, have been postponed until Labor Day weekend, 1953, due to "existing conditions," Benjamin T. Franklin, general manager of the event, announced.

NATC Group Sets Rules To Cut Noise, Accidents

The National Air Transport Coordinating Committee, headed by Capt. E. V. Rickenbacker, has adopted a program for improving public safeguards against plane accidents and reducing aircraft noise over residential areas in the New York metropolitan area.

The program, effective immediately at LaGuardia and Idlewild, includes:

Optimum use, consistent with safety, of preferential runways diverting routine operations away from residential areas.

Transference of all training flights away from New York area, except those required by Federal regulations.

"End-of-the-runway" weather reports to replace present "area weather."

Continuous recording of all communications between pilots and control towers.

Establishment of specific vertical and horizontal intervals between all planes in the airport traffic patterns.

Construction of new or improved runways at all New York City airports to make possible diversion of traffic away from populous areas.

Establishment of areas for engine run-ups where noise can be controlled.

Design and installation of improved ground noise reduction devices, such as baffles.

Glenn L. Martin Resigns

Glenn L. Martin has resigned as chairman of the board of The Glenn L. Martin Co., and has been elected honorary chairman. George M. Bunker was elected board chairman and president.

Roscoe Turner Resigns

Roscoe Turner has resigned as president and director of Lake Central Airlines, and the Roscoe Aeronautical Corp. has sold its 18,000 shares of stock in the local service line to Nationwide Airlines, Michigan intrastate line. The latter company is owned by John V. Weesner and his father. Weesner is the new president of Lake Central, in addition to his duties as executive vice president and general manager. Weesner said an employment contract has been signed with Turner, who will be compensated for services performed at \$620 per month. He had received \$1,000 a month as president.



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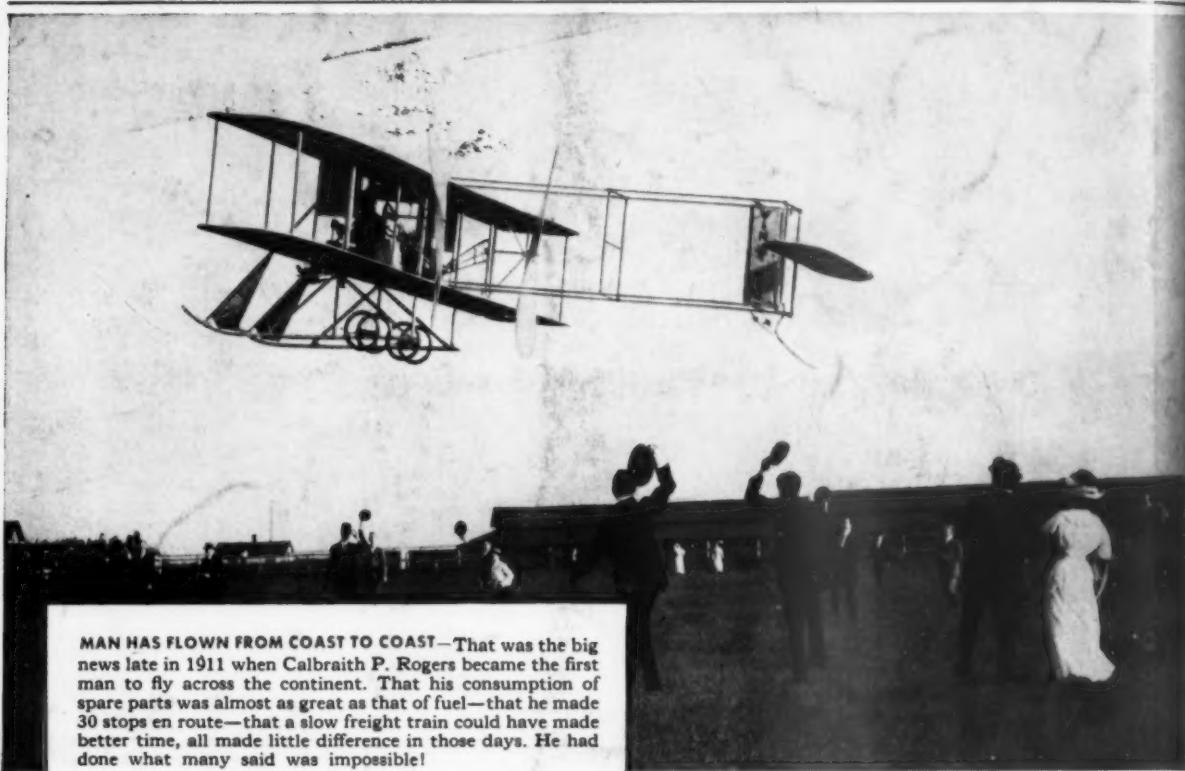
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